



Atlantic States Marine Fisheries Commission

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Patrick C. Keliher (ME), Chair

Spud Woodward (GA), Vice-Chair

Robert E. Beal, Executive Director

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

MEMORANDUM

January 20, 2021

TO: Commissioners; Proxies; American Lobster Management Board; Atlantic Coastal Cooperative Statistics Program Coordinating Council; Atlantic Herring Management Board; Atlantic Menhaden Management Board; Atlantic Striped Bass Management Board; Bluefish Management Board; Coastal Sharks Management Board; Executive Committee; Interstate Fisheries Management Program Policy Board; Mid-Atlantic Fishery Management Council; Shad and River Herring Management Board; Summer Flounder, Scup, and Black Sea Bass Management Board; Winter Flounder Management Board

FROM: Robert E. Beal 
Executive Director

RE: ASMFC Winter Meeting Webinar: February 1-4, 2021

The Atlantic States Marine Fisheries Commission's Winter Meeting Webinar will be held February 1-4, 2021. Meeting materials are now available on the Commission website at <http://www.asmfc.org/home/2021-winter-meeting-webinar>. Supplemental materials will be posted to the website on Wednesday, January 27.

Board meeting proceedings will be broadcast daily via webinar beginning Monday, February 1 at 9:30 a.m. and continuing daily until the conclusion of the meeting (expected to be 4:30 p.m.) on Thursday, February 4. The webinar will allow registrants to listen to board deliberations and view presentations and motions as they occur. To register for the webinar go to <https://attendee.gotowebinar.com/register/4886491769864000527>, Webinar ID# 151-774-483.

Each day, the webinar will begin 30 minutes prior to the start of the first meeting so that people can troubleshoot any connectivity or audio issues they may encounter. If you are having issues with the webinar (connecting to or audio related issues), please contact Chris Jacobs at 703.842.0790.

If you are joining the webinar but will not be using VoIP, you can may also call in at 415.930.5321 (a pin will be provided to you after joining the webinar); see webinar instructions http://www.asmfc.org/files/Meetings/2021WinterMeetingWebinar/Webinar_Instructions_Winter2021.pdf for details on how to receive the pin. For those who will not be joining the webinar but would like to listen in to the audio portion only, you can do so by dialing 415.930.5321 (access code: 864-933-588)

We look forward to meeting with you at the Winter Meeting Webinar. If the staff or I can provide any further assistance to you, please call us at 703.842.0740.

Enclosure: Final Agenda

MAINE • NEW HAMPSHIRE • MASSACHUSETTS • RHODE ISLAND • CONNECTICUT • NEW YORK • NEW JERSEY • DELAWARE • PENNSYLVANIA • MARYLAND • VIRGINIA • NORTH CAROLINA • SOUTH CAROLINA • GEORGIA • FLORIDA

Final Agenda

The agenda is subject to change. The agenda reflects the current estimate of time required for scheduled Board meetings. The Commission may adjust this agenda in accordance with the actual duration of Board meetings. It is our intent to begin at the scheduled start time for each meeting, however, if meetings run late the next meeting may start later than originally planned.

Monday, February 1

9:30 – 10:45 a.m.

Summer Flounder, Scup, and Black Sea Bass Management Board

Member States: Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina

Other Members: NMFS, PRFC, USFWS

Chair: Nowalsky

Other Participants: Wojcik, Snellbaker

Staff: Colson Leaning, Lewis

1. Welcome/Call to Order (*A. Nowalsky*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from August 2020
3. Public Comment
4. 2021 Recreational Management Measures for Summer Flounder, Scup, and Black Sea Bass (*D. Colson Leaning, S. Lewis*)
 - Consider State Proposals for Adjusting 2021 Recreational Measures **Possible Final Action**
 - Consider Virginia Proposal for Wave 1 Recreational Black Sea Bass Fishery **Final Action**
5. Recess for ISFMP Policy Board & Mid-Atlantic Fishery Management Council (MAFMC)
Discussion on Recreational Management Reform Initiative

10:45 – 11:45 a.m.

Interstate Fisheries Management Program Policy Board and MAFMC

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida

Other Members: DC, NMFS, PRFC, USFWS

ASMFC Chair: Keliher

MAFMC Chair: Luisi

Other Participants: Beaty

Staff: Kerns

1. Welcome/Call to Order (*P. Keliher, ASMFC/M. Luisi, MAFMC*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from August 2020
3. Public Comment
4. Discuss Recreational Management Reform Initiative (*J. Beaty*) **Possible Action**
5. Recess until Thursday, February 4 at 1:45 p.m.

Noon – 1:00 p.m.

Lunch Break

1:00 – 4:30 p.m.

Summer Flounder, Scup, and Black Sea Bass Management Board and MAFMC

Member States: Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina

Other Members: NMFS, PRFC, USFWS

Board Chair: Nowalsky

MAFMC Chair: Luisi

Other Participants: Wojcik, Snellbaker

Staff: Colson Leaning, Lewis

6. Reconvene as a Joint Meeting with MAFMC
7. Consider Draft Addendum XXXIII and Council Amendment on Black Sea Bass Commercial State Allocations for Final Approval (*S. Lewis, C. Starks*) **Final Action**
8. Other Business/Adjourn

Tuesday, February 2

8:30 a.m. – 12:15 p.m.

American Lobster Management Board

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia

Other Members: NEFMC, NMFS

Chair: McKiernan

Other Participants: Reardon, Perry, Beal, Coogan, Shank

Staff: Starks

1. Welcome/Call to Order (*D. McKiernan*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from October 2020
3. Public Comment
4. Review and Discuss Proposed Rule and Draft Environmental Impact Statement for Atlantic Large Whale Take Reduction Plan Proposed Modifications for 2021 (*C. Coogan*)
5. Consider Management Response to the 2020 American Lobster Benchmark Stock Assessment and Peer Review (*D. McKiernan*) **Possible Action**
 - Review Stock Status, Reference Points and Assessment Recommendations (*C. Starks*)
 - Discuss Development of Draft Addendum XXVII on Gulf of Maine Resiliency (*C. Starks*)
6. Discuss Potential for Conducting a Management Strategy Evaluation for the American Lobster Fishery (*B Shank/J. Kipp*)
7. Review and Populate Jonah Crab Advisory Panel Membership (*T. Berger*) **Action**
8. Elect Vice-Chair **Action**
9. Other Business/Adjourn

12:15 – 1:30 p.m.

Lunch Break

1:30 – 2:15 p.m.

Winter Flounder Management Board

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey

Other Members: NMFS

Chair: Borden

Other Participants: Nitschke, Blanchard, Brown

Staff: Colson Leaning

1. Welcome/Call to Order (*D. Borden*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from October 2020
3. Public Comment
4. Consider Specifications for the 2021 Fishing Year (*D. Colson Leaning*) **Final Action**
 - Technical Committee Report
 - Advisory Panel Report
5. Other Business/Adjourn

2:30 – 3:45 p.m.

Atlantic Menhaden Management Board

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida

Other Members: NMFS, PRFC, USFWS

Chair: Woodward

Other Participants: Newhard, Kersey

Staff: Rootes-Murdy

1. Welcome/Call to Order (*S. Woodward*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from October 2020
3. Public Comment
4. Review Recent Fishery Performance Relative to Commercial Allocations (*K. Rootes-Murdy*)
5. Other Business/Adjourn

4:00 – 5:15 p.m.

Atlantic Herring Management Board

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey

Other Members: NEFMC, NMFS

Chair: Patterson

Other Participants: Zobel, Brown

Staff: Rootes-Murdy, Franke

1. Welcome/Call to Order (*C. Patterson*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from October 2020

3. Public Comment
4. Set Sub-Annual Catch Limit for 2021-2023 Fishing Years (*K. Rootes-Murdy*) **Final Action**
5. Update on Amendment 8 and Consider Impacts to the Area 1A Fishery (*K. Rootes-Murdy*)
6. Update on New England Fishery Management Council and Commission Coordination Discussions (*R. Beal*)
7. Other Business/Adjourn

Wednesday, February 3

8:00 – 10:00 a.m.

Executive Committee

Members: Abbott, Anderson, Batsavage, Bell, Bowman, Cimino, Clark, Davis, Estes, Gilmore, Keliher, Kuhn, McKiernan, McNamee, Miller, Patterson, Woodward

Chair: Keliher

Staff: Leach

1. Welcome/Call to Order (*P. Keliher*)
2. Committee Consent
 - Approval of Agenda
 - Approval of Meeting Summary from October 2020
3. Public Comment
4. Update on Second Round of CARES Act Assistance (*R. Beal*)
5. Legislative and Appropriations Update (*R. Beal*)
6. Future Annual Meeting Update (*L. Leach*)
7. Other Business/Adjourn

10:15 – 11:00 a.m.

Coastal Sharks Management Board

Member States: Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida

Other Members: NMFS

Chair: Batsavage

Other Participants: Willey, Garner, McCandless

Staff: Rootes-Murdy

1. Welcome/Call to Order (*C. Batsavage*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from February 2020
3. Public Comment
4. Review NOAA Fisheries Cooperative Shark Tagging Program (*C. McCandless*)
5. Update from NOAA Fisheries on Highly Migratory Species Management (*K. Brewster-Geisz*)
6. Review and Populate Advisory Panel Membership (*T. Berger*) **Action**
7. Other Business/Adjourn

11:15 a.m. – 12:15 p.m. Atlantic Coastal Cooperative Statistics Program Coordinating Council

Partners: ASMFC, Connecticut, Delaware, District of Columbia, Florida, Georgia, MAFMC, Maine, Maryland, Massachusetts, NEFMC, New Hampshire, New Jersey, New York, NMFS, North Carolina, Pennsylvania, PRFC, Rhode Island, SAFMC, South Carolina, USFWS, Virginia
Chair: Carmichael
Staff: White

1. Welcome/Call to Order (*J. Carmichael*)
2. Council Consent
 - Approval of Agenda
 - Approval of Proceedings from October 2020
3. Public Comment
4. Review Project and Program Funding (*G. White*)
5. Other Business/Adjourn

12:15 – 1:45 p.m. Lunch Break

1:45 – 5:00 p.m. Atlantic Striped Bass Management Board

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina
Other Members: DC, NMFS, PRFC, USFWS
Chair: Borden
Other Participants: Sullivan, Blanchard
Staff: Franke

1. Welcome/Call to Order (*D. Borden*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from October 2020
3. Public Comment
4. Review Technical Committee Report on Release Mortality Sensitivity Runs (*K. Sullivan*)
5. Consider Stock Assessment Update Timeline (*K. Drew*) **Action**
6. Discuss Circle Hook Implementation (*T. Kerns*) **Possible Final Action**
7. Consider Draft Amendment 7 Public Information Document for Public Comment (*T. Kerns*) **Action**
8. Review and Populate Advisory Panel Membership (*T. Berger*) **Action**
9. Other Business/Adjourn

Thursday, February 4

8:30 – 11:30 a.m.

Shad and River Herring Management Board

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida

Other Members: DC, NMFS, PRFC, USFWS

Other Participants: Sprankle, Furlong, Lyons Gromen, Neilan

Chair: Armstrong

Staff: Starks

1. Welcome/Call to Order (*M. Armstrong*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from August 2020
3. Public Comment
4. Consider Management Response to 2020 Shad Benchmark Stock Assessment and Peer Review (*M. Armstrong*)
 - Review Technical Committee Recommendations (*B. Neilan*)
 - Advisory Panel Report (*P. Lyons Gromen*)
5. Review Technical Committee Recommendations on Improvements to Amendments 2 and 3 (*B. Neilan*) **Possible Action**
6. Consider Shad Habitat Plan Updates **Action**
 - Review Technical Committee Recommendations (*B. Neilan*)
7. Consider Fishery Management Plan Review and State Compliance for the 2019 Fishing Year (*C. Starks*) **Action**
8. Review and Populate Advisory Panel Membership (*T. Berger*) **Action**
9. Other Business/Adjourn

11:30 a.m. – 12:45 p.m. Lunch Break

12:45 – 1:30 p.m.

Bluefish Management Board

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida

Other Members: NMFS, PRFC, USFWS

Chair: Batsavage

Other Participants: Celestino, Kersey

Staff: Colson Leaning

1. Welcome/Call to Order (*C. Batsavage*)
2. Board Consent
 - Approval of Agenda
 - Approval of Proceedings from August 2020
3. Public Comment
4. Consider Revisions to the Addendum I Biological Monitoring Program (*D. Colson Leaning*) **Final Action**
5. Review and Populate Advisory Panel Membership (*T. Berger*) **Action**
6. Other Business/Adjourn

1:45 a.m. – 4:15 p.m. Interstate Fisheries Management Program Policy Board

6. Reconvene from February 1, 2021
7. Public Comment
8. Executive Committee Report (*P. Keliher*)
9. Progress Update on the Risk and Uncertainty Policy (*J. McNamee*)
 - Review Draft of the Risk and Uncertainty Policy
 - Discuss Steps to Consider Final Approval of the Policy
10. Review and Discuss 2020 Commissioner Survey Results (*D. Tompkins*)
11. Review State Membership on Species Management Boards (*T. Kerns*) **Action**
 - Review State Declared Species of Interest
 - Review Pennsylvania’s Membership on the Atlantic Menhaden Management Board
12. Discuss Commission Process for Working on Recreational Reform Issues with the MAFMC (*T. Kerns*)
13. Discuss Possible Reporting Programs to Capture Recreational Release Data (*T. Kerns*)
14. Committee Reports (*L. Havel*) **Action**
 - Habitat Committee
 - Artificial Reef Committee
 - Atlantic Coast Fisheries Habitat Partnership
15. Review Noncompliance Findings (if necessary) **Action**
16. Other Business/Adjourn

4:15 – 4:30 p.m. Business Session

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida
Chair: Keliher
Staff: Beal

1. Welcome/Call to Order (*P. Keliher*)
2. Committee Consent
 - Approval of Agenda
 - Approval of Proceedings from October 2020
3. Public Comment
4. Consider Noncompliance Recommendations (if necessary) **Final Action**
5. Other Business/Adjourn

1:45 a.m. – 4:15 p.m. Interstate Fisheries Management Program Policy Board

6. Reconvene from February 1, 2021
7. Public Comment
8. Executive Committee Report (*P. Keliher*)
9. Progress Update on the Risk and Uncertainty Policy (*J. McNamee*)
 - Review Draft of the Risk and Uncertainty Policy
 - Discuss Steps to Consider Final Approval of the Policy
10. Review and Discuss 2020 Commissioner Survey Results (*D. Tompkins*)
11. Review State Membership on Species Management Boards (*T. Kerns*) **Action**
 - Review State Declared Species of Interest
 - Review Pennsylvania's Membership on the Atlantic Menhaden Management Board
12. Discuss Commission Process for Working on Recreational Reform Issues with the MAFMC (*T. Kerns*)
13. Discuss Possible Reporting Programs to Capture Recreational Release Data (*T. Kerns*)
14. Committee Reports (*L. Havel*) **Action**
 - Habitat Committee
 - Artificial Reef Committee
 - Atlantic Coast Fisheries Habitat Partnership
15. Review Noncompliance Findings (if necessary) **Action**
16. Other Business/Adjourn

4:15 – 4:30 p.m. Business Session

Member States: Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Delaware, Maryland, Virginia, North Carolina, South Carolina, Georgia, Florida
Chair: Keliher
Staff: Beal

1. Welcome/Call to Order (*P. Keliher*)
2. Committee Consent
 - Approval of Agenda
 - Approval of Proceedings from October 2020
3. Public Comment
4. Consider Noncompliance Recommendations (if necessary) **Final Action**
5. Other Business/Adjourn

Atlantic States Marine Fisheries Commission

Summer Flounder, Scup, and Black Sea Bass Management Board

February 1, 2021

9:30 – 10:45 a.m.

and

1:00 – 4:30 p.m.

Webinar

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order (*A. Nowalsky*) 9:30 a.m.
2. Board Consent 9:30 a.m.
 - Approval of Agenda
 - Approval of Proceedings from August 2020
3. Public Comment 9:35 a.m.
4. 2021 Recreational Management Measures for Summer Flounder, Scup, and Black Sea Bass (*D. Colson Leaning/S. Lewis*) **Board Action Only** 9:45 a.m.
 - Consider State Proposals for Adjusting 2021 Recreational Measures
Possible Action
 - Consider Virginia Proposal for Wave 1 recreational Black Sea Bass Fishery **Final Action**
5. Recess for ISFMP Policy Board & Mid-Atlantic Fishery Management Council (MAFMC) Discussion on Recreational Management Reform Initiative 10:45 a.m.
6. Reconvene as a Joint Meeting with MAFMC 1:00 p.m.
7. Consider Addendum XXXIII and Council Amendment on Black Sea Bass Commercial State Allocations for Final Approval (*S. Lewis/C. Starks*) **Final Action** 1:00 p.m.
8. Other Business/Adjourn 4:30 p.m.

MEETING OVERVIEW

ASMFC Summer Flounder, Scup, and Black Sea Bass Management Board

February 1, 2021

9:30 – 10:45 a.m.

and

1:00 – 4:30 p.m.

Webinar

Chair: Adam Nowalsky (NJ) Assumed Chairmanship: 12/19	Technical Committee Chair: Greg Wojcik (CT)	Law Enforcement Committee Representative: Jason Snellbaker (MD)
Vice Chair: Justin Davis (CT)	Advisory Panel Chair: Vacant	Previous Board Meeting: August 6, 2020
Voting Members: MA, RI, CT, NY, NJ, DE, MD, PRFC, VA, NC, NMFS, USFWS (12 votes)		

1. Board Consent

- Approval of Agenda
- Approval of Proceedings from August 2020

2. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time should use the webinar raise your hand function and the Board Chair will let you know when to speak. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance, the Board Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

3. 2021 Recreational Management Measures for Summer Flounder, Scup, and Black Sea Bass (9:45-10:45 a.m.) Board Action Only

Background

- | |
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| <ul style="list-style-type: none"> • At the December 2020 joint ASMFC/MAFMC meeting the Board approved the continued use of regional management approaches to set state scup recreational measures for 2021. Due to lack of 2020 recreational harvest data, Council staff recommended status quo for the 2021 Recreational Harvest Limit (RHL) and minimal changes to state recreational fisheries. • The TC meets on January 19 to consider analysis and make recommendations on 2021 summer flounder, scup, and black sea bass state measures. (Supplemental Materials) |
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Presentations

- | |
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| <ul style="list-style-type: none"> • Overview of status quo measures by S. Lewis/ D. Colson Leaning • State proposals and TC recommendations for 2021 summer flounder, scup, and black sea bass recreational measures by S. Lewis/ D. Colson Leaning |
|--|

Board Actions for Consideration
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- | |
|---|
| <ul style="list-style-type: none"> • Approve proposals for 2021 recreational measures. |
|---|

4. Recess for ISFMP Policy Board & MAFMC Discussion on Recreational Reform Initiative

5. Reconvene as a Joint Meeting with the MAFMC

6. Draft Addendum XXXIII and Council Amendment on Black Sea Bass Commercial State Allocations (1:00-4:20 p.m.) Final Action

Background

- In October 2019, the Summer Flounder, Scup, and Black Sea Bass Management Board (Board) initiated development of Draft Addendum XXXIII to the Interstate Fishery Management Plan (FMP) for Summer Flounder, Scup, and Black Sea Bass, and in December 2019 the Council initiated a parallel amendment. The Draft Addendum and Council Amendment consider modifications to the black sea bass commercial state allocations, as well as whether the state allocations should be included in the Council's FMP (**Briefing Materials**).
- In December 2020, the Board and Council met jointly to consider the addendum and amendment for final action. The relevant materials from the December joint meeting (public comment summary, Advisory Panel input, and draft impact analysis) can be found [here](#).
- At the joint [December meeting](#), the Board and Council only approved alternatives pertaining to federal regulations. They voted to include the state allocations of the commercial black sea bass quota in the Council's FMP, and to modify the regulations for such that a federal in-season closure would occur when once landings are projected to exceed the coastwide quota plus an additional buffer of up to 5%. The Board and Council postponed decisions on modifying the state allocations to the Commission's 2021 Winter Meeting (**Briefing Materials**).
 - Council staff provided an updated recommendation on the Amendment alternatives (**Briefing Materials**).

Presentations

- Review of Draft Addendum XXXIII Options by C. Starks

Board Actions for Consideration

- Final approval of Draft Addendum XXXIII

7. Other Business/Adjourn

Summer Flounder, Scup, & Black Sea Bass 2021 TC Tasks

Activity level: High

Committee Overlap Score: High (Multi-species committees for this Board)

Committee Task List

- January 2021: Webinar meeting to review state proposals for modifications on 2021 specifications (coastwide quota and RHLs) for summer flounder, scup, and black sea bass.
- Spring 2021: *Tentative* – develop technical documents for recreational reform initiatives in conjunction with the bluefish technical committee
- June 1 – Annual compliance reports due
- July 2021: Develop recommendations on 2022 specifications (coastwide quota and RHLs) and commercial management measures for summer flounder, scup and black sea bass
- November 2021: Meeting on 2022 recreational measures

TC Members: Greg Wojcik (CT, TC Chair), Julia Beaty (MAFMC), Peter Clarke (NJ), Dustin Colson Leaning (ASMFC), Karson Coutre (MAFMC), Kiley Dancy (MAFMC), Lorena de la Garza (NC), Steve Doctor (MD), Emily Keiley (NOAA), Jeff Kipp (ASMFC), Alexa Kretsch (VA), Savannah Lewis (ASMFC), John Maniscalco (NY), Gary Shepherd (NOAA), Corinne Truesdale (RI), Sam Truesdell (MA), Mark Terceiro (NOAA), Richard Wong (DE)

DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
SUMMER FLOUNDER, SCUP AND BLACK SEA BASS MANAGEMENT BOARD
AND
MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

Webinar
August 6, 2020

These minutes are draft and subject to approval by the Summer Flounder, Scup and Black Sea Bass Management Board. The Board will review the minutes during its next meeting.

Draft Proceedings of the Summer Flounder, Scup, and Black Sea Bass Management Board and
Mid-Atlantic Marine Fisheries Council Meeting Webinar
August 2020

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These minutes are draft and subject to approval by Summer Flounder, Scup, and Black Sea Bass Management Board. The Board will review the minutes during its next meeting.

INDEX OF MOTIONS

1. **Approval of Agenda** by Consent (Page 1).
2. **Approval of Proceedings of May 2020** by Consent (Page 1).
3. **Main Motion**
Move to approve Draft Addendum XXXIII and Council public hearing document, as presented today, for public comment (Page 18). Motion by Jason McNamee on behalf of the Board.

Motion to Postpone
Move to postpone further action on the Commission's Black Sea Bass Addendum XXXIII and the Council's amendment public hearing document until the August 2021 meeting to allow progress on the commercial/recreational reallocation amendment (Page 22).
Board: Motion by Ellen Bolen; second by Tom Fote. Motion fails for lack of majority (5 in favor, 5 opposed, 2 abstentions) (Page 32).
Council: Motion by Ellen Bolen; second by Tony DiLernia

Main Motion
Move to approve Draft Addendum XXXIII and Council public hearing document as presented today, for public comment.
Council: Motion by Maureen Davidson; second by Ellen Bolen. Motion carried (Page 34).
Board: Motion by Jason McNamee; second by Justin Davis. Motion carried.
4. **Move to approve Option C in the Massachusetts conservation equivalency proposal to modify the black sea bass recreational for-hire season for the dates May 25-October 9** (Page 54). Motion by Raymond Kane; second by Justin Davis. Motion carried (Page 59).
5. **Motion to adjourn** by consent (Page 60).

Draft Proceedings of the Summer Flounder, Scup, and Black Sea Bass Management Board and
Mid-Atlantic Marine Fisheries Council Meeting Webinar
August 2020

ATTENDANCE

Board Members

Dan McKiernan, MA (AA)	Adam Nowalsky, NJ, Legislative proxy
Nichola Meserve, MA, Administrative proxy	John Clark, DE, proxy for D. Saveikis (AA)
Raymond Kane, MA (GA)	Roy Miller, DE (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Bill Anderson, MD (AA)
Jason McNamee, RI (AA)	Mike Luisi, MD, proxy for B. Anderson (AA)
David Borden, RI (GA)	Russell Dize, MD (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Phil Langley, MD, proxy for Del. Stein (LA)
Justin Davis, CT (AA)	Ellen Bolen, VA, proxy for S. Bowman (AA)
Matt Gates, CT, proxy for Sen. Miner (LA)	Pat Geer, VA Administrative proxy
Maureen Davidson, NY, proxy for J. Gilmore (AA)	Steve Murphey, NC (AA)
Emerson Hasbrouck, NY (GA)	Chris Batsavage, NC, Administrative proxy
Joe Cimino, NJ (AA)	Marty Gary, PRFC
Tom Fote, NJ (GA)	Mike Pentony, NMFS
Asm. Eric Houghtaling, NJ (LA)	Mike Ruccio, USFWS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Staff

Bob Beal	Laura Leach
Toni Kerns	Dustin Colson Leaning
Kristen Anstead	Sarah Murray
Max Appelman	Kirby Rootes-Murdy
Julia Beaty, MAFMC	Mike Schmidtke
Karson Coutre, MAFMC	Caitlin Starks
Kiley Dancy, MAFMC	Deke Tompkins
Maya Drzewicki	Geoff White
Chris Jacobs	
Jeff Kipp	

Guests

Karen Abrams, NOAA	Jeff Deem, Lorton, VA
John Almeida, NOAA	John DePersenaire, RFA
Pat Augustine, Coram, NY	Greg DiDomenico, Cape May, NJ
Alan Bianchi, NC DENR	David Dietz, NC DENR
William Brantley, NC DENR	Anthony DiLernia
Jeff Brust, NJ DEP	Steve Doctor, MD DNR
Morgan Corey, NOAA	Michelle Duval
Jessica Daher, NJ DEP	Warren Elliott, PA (LA)
Lorena de la Garza	Dan Farnham

These minutes are draft and subject to approval by Summer Flounder, Scup and Black Sea Bass Management Board. The Board will review the minutes during its next meeting.

Draft Proceedings of the Summer Flounder, Scup, and Black Sea Bass Management Board and
Mid-Atlantic Marine Fisheries Council Meeting Webinar
August 2020

Guests (continued)

Marianne Ferguson, NOAA
James Fletcher, Wanchese Fish Co
Jared Flowers, GA DNR
Lew Gillingham, VMRC
Angela Giuliano, MD DNR
Sonny Gwin
Jon Hare, NOAA
Doug Haymans, GA (AA)
Steve Heins
Dewey Hemilright
Carol Hoffman, NYS DEC
Peter Hughes
Jeff Kaelin, Lund's Fisheries
Emily Keiley, NOAA
Alexa Kretsch, VMRC
Kris Kuhn, PA F&B
Dee Lupton, NC DENR
Chip Lynch, NOAA
Shanna Madsen, VMRC
John Maniscalco, NYS DEC
Casey Marker
Genine McClair, MD DNR
Mike Millard, FL FWS
Chris Moore, CBF
Allison Murphy, NOAA
Brian Neilan, NJ DEP
Ken Neill

Laurie Nolan
Gerry O'Neill, Cape Seafoods
Cheri Patterson, NH (AA)
Stephen Pearson, MAFMC
Rich Pendleton, NYS DEC
Olivia Phillips, VMRC
Jill Ramsey, VMRC
Mary Sabo, MAFMC
Scott Sakowski, NOAA
Brandi Salmon, NC DENR
Tata Scott, NOAA
Matt Seeley, MAFMC
Alexei Sharov, MD DNR
Thomas Sminkey
Somers Smott, VMRC
David Stormer, DE DFW
Helen Takade-Heumacher, FL FWS
Mark Terceiro, NOAA
Wes Townsend
Sam Truesdell, MA DMF
Mike Waive, ASA
Craig Weedon, MD DNR
DeVonte Weems
Angel Willey, MD DNR
Sara Winslow
Chris Wright, NOAA
Erik Zlokovitz, MD DNR

These minutes are draft and subject to approval by the Summer Flounder, Scup and Black Sea Bass Management Board. The Board will review the minutes during its next meeting.

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The Summer Flounder, Scup, and Black Sea Bass Management Board of the Atlantic States Marine Fisheries Commission and Mid-Atlantic Fishery Management Council (MAFMC) convened via webinar; Thursday, August 6, 2020, and was called to order at 11:30 a.m. by Chairmen Adam Nowalsky and Chairman Michael Luisi.

CALL TO ORDER

CHAIRMAN ADAM NOWALSKY: Good morning everyone. My name is Adam Nowalsky; Legislative proxy for the ASMFC from New Jersey, and Council member. I would like to call to order the Summer Flounder, Scup, and Black Sea Bass Management Board meeting jointly with the Mid-Atlantic Fishery Management Council today.

I will be joined by Mike Luisi, as Chair of the Council. I'll go through a couple of items here. We'll follow the Commission process with regards to Board Consent for Agenda and Proceedings, which I'll get to here in just a moment. Also, what we have on the agenda right now is first a Commercial Draft Addendum, which we'll take up for commercial black sea bass reallocation.

We'll get this afternoon an update on recreational reform, with a possible action to formally initiate that. Then we'll have a Board only action after that. With regards to timing, we are starting a little bit late here. But what I do intend to do with the agenda, after speaking briefly here with Mike, is we intend to go for about an hour, intend to take a lunch break from approximately 12:30 to 1:00, which would get us back on schedule.

But, if we do have a logical stopping point, 12:15ish or something, we'll go ahead and propose we stop at that point. But the intention would be to resume at 1:00, whenever we do stop.

APPROVAL OF AGENDA

With that note regarding the agenda, the first item to come before us would be an approval of the agenda, as described to be modified here.

Is there any objection to that? Seeing none, and I do have the ability to see hands, but staff, if I miss someone who wants to speak, please bring it to our attention, so we don't miss anyone. But otherwise, I'll try to keep tabs on that. Without objection the agenda is approved by consent.

APPROVAL OF PROCEEDINGS

CHAIRMAN ADAM NOWALSKY: Next item is approval of proceedings from the May 2020 Board.

Is there any objection to approval of those proceedings or recommended changes to them? Okay, not seeing any hands raised, and not hearing anything. We will approve those proceedings.

PUBLIC COMMENT

CHAIRMAN ADAM NOWALSKY: The next item to come before us would be Public Comment for anything that is not on the agenda today. Are there any members of the public that want to speak to summer flounder, scup, and black sea bass for anything that is not on the agenda? Okay, I'm not seeing any hands nor hearing anyone speak up, so we will move on from that. The next item to come before us then will be to have a staff presentation of the Draft Addendum XXXIII, and Complementary Council Amendment for Commercial Black Sea Bass Management, and I'll turn to staff to get us going with that. Thank you very much.

CONSIDERATION OF DRAFT ADDENDUM XXXIII, AND COMPLEMENTARY COUNCIL AMENDMENT FOR COMMERCIAL BLACK SEA BASS MANAGEMENT

MS. CAITLIN STARKS: Please let me know if you can't hear me all right, or if the slides aren't showing up. But I'm going to get started. As Adam indicated, this is an overview of Draft Addendum XXXIII and the public hearing document for the Council's Amendment. As a reminder, this is a joint action that is considering changes to the black sea bass commercial state

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allocations, as well as several options for changes to federal management of commercial black sea bass.

We have a lot to go over, so I'll start with a brief background on the action, go over the problem and goal statement, status of the fishery, and then I'll review the proposed management options related to the commercial state-by-state allocations, which are listed on the slide here. Then I'll move to the proposed options for federal management of the state allocations, as well as in-season closures, and finally wrap up with next steps.

This is a shortened version of the timeline of this Draft Addendum leading up to today. As most of you know, work on this topic began in 2018 through a workgroup process of the Board, and then in October 2019, the Board initiated an Addendum to consider adjusting the state commercial allocations, based on the workgroup and then the PDTs recommendation.

Then in December 2019, the Council initiated an Amendment to make this a joint action, and then following that from January to July of this year, the PDT developed the options in Draft Addendum XXXIII, and today that draft document is being considered by the Board and Council for public comment.

BLACK SEA BASS COMMERCIAL ALLOCATION

MS. STARKS: The problem statement for this Addendum and Council Amendment addresses the issue that commercial black sea bass state allocations were originally implemented in 2003 through Amendment 13. That there have been significant changes to stock abundance and distribution in the last decade, as the stock has grown and expanded more to the north of Hudson Canyon, and as a result the current allocations are not aligned with the current distribution and availability of the resource.

This joint action has two goals, the first being to consider adjusting the current commercial black sea bass allocations, using current distribution and abundance of black sea bass as one of several adjustment factors, to achieve more balanced access to the resource. These adjustment factors will be identified as the development process moves forward.

The other goal is to consider whether the state allocations should continue to be managed only under the Commission's FMP, or whether they should be managed under both the Council and Commission FMPs. To save time on going over the options, I won't go into detail on this, but I did at least want to highlight the fact that this Draft Addendum includes a section on status of the fishery, which isn't something that we normally include in addenda, but the PDT did think it was important context for this action. This section includes some information on black sea bass landings, price, gear type, location of catch, and quota transfers among states. The information sources included dealer data, VTR data, and qualitative information provided by a few fishermen and dealers. Just a quick note. There is one area in the document that needs to be corrected in that section.

This is language that the PDT agreed on, but that revision didn't quite make it into the document in the meeting material. I just want to make sure everyone is aware that this change will be made after the meeting if the document gets approved. The text on this slide will replace the first two sentences of paragraph 3 on page 8, and this doesn't impact the rest of the document, but it's just a correction to the text that reflect the correction that was made to Figure 3 in the document.

Moving on to the proposed management options. There is a full flow chart included in Appendix 1 of the document, so that you can follow along. But this is the overall structure of the draft options, and as you can see there are quite a few of them. Not shown on this slide are many sub options included under each of the main options.

First, as always, there is Option A status quo. The table on the right shows the currency allocations established in 2003, and these were based again

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loosely on historical landings from 1980 to 2001, and are currently only managed under the Commission FMP, while the Council manages the coastwide quota.

Action B proposes to increase Connecticut's quota to 5 percent from its current 1 percent, and this is intended to address the disparity between their current quota and the increases in black sea bass availability that have occurred in recent years in Connecticut state waters. The method proposed to get to that 5 percent is to hold Delaware and New York constant, because they have also got relatively low quotas, and have seen some increases in New York.

The next step would be to move 0.25 percent each from Maine and New Hampshire to Connecticut, and lastly to move some quota from the remaining states to Connecticut, in proportion to their current allocations to get to the total of 5 percent. This option is intended to either stand alone or be combined with other options, so that the new allocations in the table would serve as the starting point for any additional allocation changes being considered.

Next is Option C, the DARA approach, which stands for Dynamic Adjustments to Regional Allocations. This is a formulaic method that aims to balance fishery stability in the changing stock distribution. The approach has two phases. Phase one is the transition period in which you start with the initial allocations, which are currently not influenced by soft distribution. Then you gradually adjust that through a formula to give the current stock distribution more weight in determining the state allocation.

At the end of the transition you have allocations that are based in part on stock distribution information. Then Phase two is that the state allocations are no longer being adjusted to give more weight to the stock distribution information, but rather they're only updated when new information on regional stock distribution becomes available, such as when

there is a new stock assessment. They still would have a dynamic component that changes with stock distribution. This approach is very flexible in the sub-options, but I'll go over can be used to set the scale and pace of the change in allocations during both phases. Before going into the various sub-options, I just want to note that the sub-options provided in each set are meant to represent a range recommended by the PDT, with the understanding that the final management option selected by the Board and Council could fall within the sub-option values provided for public comment.

The first set of sub-options shown here would determine at the end of the transition period what the relative importance of the initial allocation versus the resource distribution factors is in determining the state allocation. Option C1-A proposes allocations that would be based 90 percent on soft distribution, and 10 percent on the initial allocations.

This would result in allocations being more dependent on stock distribution information than on the initial allocation. Option C1-B proposes relative weights of 50 percent stock distribution, 50 percent initial allocation. This results in the two factors being equal in determining the allocation. The figure at the bottom just shows those percentage distributions, in comparison with each other.

The next set of sub-options determines during the transition period how much those relative weights assigned to each factor would change in each adjustment. Sub-option C2-A would change the relative weights by 5 percent per adjustment, and Sub-option C2-B would change the relative weight by 20 percent per adjustment.

If you imagine you're starting from the status quo allocations, which are based currently on 100 percent on the initial allocations, and 0 percent on resource distribution. In that first adjustment you could go from 100 percent initial allocation to either 80 percent initial allocations, 20 percent distribution or 95 percent initial allocations and 5 percent distribution under these two sub-options.

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As you can see with the figure, with Option C2-A it would take more adjustments and more time to get from the starting weights to the final weights of each factor that is chosen in the last set of sub-options, so that the overall transition period would take longer than it would under Option C2-B.

The third sub-options that determines how often during the transition period adjustments are made to the weights of the initial allocation and stock distribution factors, and the two options are to make adjustments either every year, or to make adjustments every other year, until you reach the final weights.

I'll just note again that once you reach the final weights of each factor the transition period ends, and adjustments are made to the allocations only when new regional stock distribution information is available. Then the fourth set of sub-options allow the cap to be set to limit the amount of change in the regional allocations per adjustment during the transition period.

There are three options here, a 3 percent cap, 10 percent cap, and no cap. This comes into play when, for example, an adjustment is made to the percent weights of the initial allocation and stock distribution factors. That results in the formula producing a change in the regional allocation. For example, if you have a 3 percent cap, the southern region quota could only change from 50 percent to 53 percent in one adjustment, even if the formula is dictating that it is supposed to change from 50 to 55 percent, based on the weights of those two factors and the regional stock distribution proportions.

No cap would allow for the regional allocation to just change as much as the formula dictates, based on the relative importance of those two factors. I'll note that the PDT recommended including no cap, along with the range of 3-10 percent, because caps higher than 10 percent would not really be likely to have much of an impact, because even if no cap was included the

regional allocations were not predicted to change by much greater percentage in a single adjustment.

Like the last set of sub-options, these two would also affect the length of the transition period. I know this option is pretty complicated, so I just want to do a quick rundown of how the formula works in the DARA approach, to produce the overall state allocations of the coastwide quota. With the formula you start with the coastwide quota, and then that gets divided into the portion based on the initial allocations and the portion based on stock distribution.

Then the first portion is divided among all states based on their initial allocations, and the second portion is divided regionally based on the proportions of stock biomass in each region. Then those regional proportions get allocated to the states in each region, in proportion to their initial allocation, and finally each state gets its overall quota allocation from the part of the quota based on the initial allocation, plus the part of the quota that is allocated regionally.

The sub-options I just reviewed would of course determine what the percentages are in the first step of this equation that I just showed, during each year of the transition and afterward. The next option in the document is Option D, the trigger approach. This approach set the minimum level of coastwide quota as a trigger for a change in the state allocations.

If the annual quota is higher than that quota trigger, then the amount of coastwide quota up to and including the trigger amount would be distributed to the states according to base allocations. The amount of quota above the established trigger, the surplus quota, would be distributed using a different allocation scheme.

The trigger amount in the allocation scheme for the surplus quota are determined by the sub-options that I'll go over. The first set of sub-options is to determine that trigger amount. Option B1-A is a three-million-pound trigger, which is lower than 11 of the 24 quotas that we had since 1998, and lower than the last three years of quota before the recent increase, based on the new stock assessment.

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At the last meeting the Board requested that a 4.5-million-pound trigger be considered, so that is included as a higher sub-option level. As you can see on the figure, no quotas before 2020 are above that 4.5-million-pound trigger. Given that there are some sector allocation discussions going on, and not knowing what the result of those will be. I just want to note that this may not result in any changes to allocations if these quotas were to come back down to the levels that they were at before 2020, as a result of any sector reallocation or changes in the stock size. As with the DARA sub-options, these options are provided as a range, with the understanding that the Board and Council could select final options within the range of these values. For the next set of sub-options, which are focused on distribution of the surplus quota. The proposed options are to either distribute that surplus evenly to the states of Massachusetts through North Carolina, which is Option B2-A, or to distribute the surplus quota among regions, based on regional biomass proportions from the stock assessment, which is Option B2-B.

The percentages that are used in the document are 84 percent in the north and 16 percent in the south, and that is just according to the 2019 stock assessment. The figure on the right here, the visualization of what Option D2-B looks like with the regional distribution component, and I'll just note also that for Maine and New Hampshire, given their historically low participation in this fishery, and that they currently don't have a declared interest in the fishery.

Under both of these options each state would only receive 1 percent of the surplus quota, and for Sub-Option D2-B that 1 percent would come out of the northern region surplus quota. This next set of sub-options only applies if Option D2-B on the last slide is chosen. These options would then determine how the regional surplus quotas get divided among the states in each region.

Option D3-A is that the regional quota would get divided evenly among the states in a region, and Option D3-B is that the regional quota would get divided among the states in a region, in proportion to their initial allocation. Again, Maine and New Hampshire are the exception, so only getting 1 percent of the northern region quota under either option.

I'll just note, in the figure on the right New Jersey is included with the southern region for this example, but there are options later that could result in a different regional configuration, so I just want to make that noted. The last set of sub-options for the trigger approach relates to whether the base allocations used to allocate the quota up to and including the trigger value would change over time.

Sub-option D4-A is for static base allocations, meaning they would not change over time, and every year the quota up to and including the trigger would be allocated using those initial allocations. Sub-option D4-B is for dynamic base allocations, meaning that a quota up to and including the trigger would be allocated according to the previous year's final state allocation.

The PDT recommended that these sub-options only apply under the regional surplus allocation option D2-B, because when combined with the other sub-option it would eventually just result in every state having the same allocation. The PDT also noted that the dynamic option has the potential to change the allocations more rapidly than the static options. The next option, Option E is a trigger approach that would apply the surplus quota to increase the Connecticut and New York allocations first.

It proposes using a three-million-pound trigger level, with the first three million pounds distributed based on the initial allocations, and the surplus distributed first to Connecticut to increase their overall allocation from 1 to 5 percent, and then to New York to increase their overall allocation from 7 to 9 percent of the coastwide quota, and then lastly any remaining surplus quota would be split between the northern and southern regions according to the proportion of biomass in each region, and then allocated to states

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within each region in proportion to the intraregional allocation. There are no additional sub-options for this option. Action F is an approach in which a fixed percentage of the annual coastwide quota would be distributed, based on the initial allocations, and then the other percent would be distributed differently. This is a little bit different from the trigger approach in that the overall quota amount doesn't affect the percentage of quota allocated, using the base allocation.

It allows some of the quota to be allocated using a different distribution, even when there are lower coastwide quotas. The first sub-options that would determine what percentage of the coastwide quota would be allocated based on the initial allocations, and the PDT recommended the sub-options that range from 25 percent to 75 percent.

As you can see on the graph, those percentages would stay the same under different total quotas. The 25 percent option would result in allocations that are more different from the current allocations, while the 75 percent option would result in allocations that are more similar to the current allocations.

The next set of sub-options are very similar to those under the trigger approach, so I'm not going in too much detail. But this set determines how the remaining percentage of the annual quota is distributed to the states, and sub-option F2-A is for an even distribution to the states of Massachusetts through North Carolina.

Again, Maine and New Hampshire would receive 1 percent, and then F2-B is for the remaining quota to be distributed based on regional biomass from the stock assessment. The options that determine how the regional quota is distributed to the states within the regions, again this is only applicable if the regional option F2-B is chosen.

The sub-options here are the same as under the trigger approach, with either regional quota being distributed evenly to the states within each region, or distributed in proportion to the intraregional allocation. That was all of the allocation approaches, but as you've seen Options C through F have the potential to incorporate regional distribution information from the stock assessment, and therefore they would require regional configuration. The PDT proposed two options for regional configuration.

Option D1 is to have two regions, Maine through New York and New Jersey through North Carolina. These generally align with the stock assessment spatial sub units, but New Jersey is included in the southern region. Then Option G2 would establish three regions, Maine through New York, New Jersey on its own, and Delaware through North Carolina. This option is aiming to attempt to address New Jersey's unique position straddling Hudson Canyon, which is used as the border between the northern/southern spatial sub units in the stock assessment.

If this option is selected, New Jersey's current 20 percent allocation would be treated as if 10 percent of it comes from the northern region, and 10 percent of it comes from the southern region. As the regional allocations change under those options that I went over, New Jersey's northern portion, 10 percent, would change according to the proportion of biomass in the northern region, and the southern 10 percent would change according to the proportion of biomass in the southern region. Therefore, New Jersey's total allocation would be the sum of those northern and southern components of the allocation. The PDT recommended this approach to New Jersey, because it is generally consistent with the spatial distribution in New Jersey's black sea bass commercial landings in recent years, which are roughly split evenly between north and south of Hudson Canyon on average.

Those are all the options relating to the commercial state quota allocations, and I'm going to go over those related to federal management of commercial black sea bass. The first issue under federal management options is whether to add the commercial state allocations to the Council's FMP or not.

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Action A is status quo, which is that they would remain only in the Commission's FMP, and Option E is that they would be included in both the Commission and Council FMPs. If Option B is selected, it is noted that future allocation changes would be considered through joint action of both bodies, that state landings would be monitored by NOAA Fisheries, and then interstate transfers would also be monitored by NOAA Fisheries.

That does have potential to impact the possibility of interstate transfers. These sub-options would determine when payback of state quota overages is required, and they would only apply if state allocations are added to the Council FMP. Sub-option B1 would require payback to state overages, only if the coastwide quota is exceeded.

This is the current process that is used by the Commission under Addendum XX. Then sub-option B2 would always require states to payback overages if their quota was exceeded, and the exact amount of pounds by which the quota is exceeded would be deducted from the state's allocation in a following year. The second issue for consideration under federal management is when federal in-season closures would occur.

This issue was raised by the Black Sea Bass Commercial Working Group, and PDT, with some states being concerned about the possibility of a coastwide closure unfairly impacting states that haven't totally utilized their quotas. To be clear, these options are available whether the allocations would be added to the Council FMP or not. Option A is status quo, which is that a coastwide federal in-season closure would occur when landings are projected to exceed the coastwide quota.

Action B is that a coastwide closure would occur when landings are projected to exceed the coastwide quota, plus a buffer of up to 5 percent of the coastwide quota. That is to help minimize potential impacts of coastwide

closures on states that haven't fully harvested their quotas. With this option the Council and Board would agree to the appropriate buffer amount for the upcoming year through the specifications process.

The PDT felt that allowing the buffer to be set through specifications would make sense, because a larger or smaller buffer might be appropriate in any given year, based on a number of factors. But they did agree that the buffer amount should be capped at 5 percent of the coastwide quota, to help prevent notable overages. Then Option C is that a coastwide closure would occur when the commercial ACL is projected to be exceeded. The caveat for this option is that discards in weight cannot currently be monitored in-season, so it would require GARFO to make some assumptions about discards in the current year, in order to project when the ACL has been exceeded. That concludes the discussion of the proposed management options. Now we'll move on to next steps.

This is a potential timeline for the action, so if the Draft Addendum and Council Amendment Hearing Document are approved for public comment today, then joint public hearings could take place in the late summer and fall of this year, and this would allow the Board and Council to consider final approval of Addendum XXXIII, and the Council Amendment in December, 2020. That would mean the Commission Addendum could be effective for the 2021 fishing year.

But for the Council Amendment there would be a lag in the implementation, while the Council documents are being prepared and the federal rule making process occurs. For the Council, these changes would likely be effective for the 2022 fishing year at the earliest. Then I wanted to specifically highlight some thoughts on public hearings, which as I mentioned could take place this fall.

Adapting so all hearings could be considered joint Council and Commission hearings, and given the pandemic, we're assuming these hearings would be held virtually. If they are virtual hearings, that would mean holding individual state hearings might not be necessary or desired. We would suggest something

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about having several hearings that stakeholders from any state could attend.

Staff has discussed the idea of having each hearing kind of have a geographic focus on a species. But again, since they are virtual, anyone could really attend any hearing, and that would allow some more flexibility for the public. This is my last slide, and it's just to highlight the two decision points for the Board and Council today.

The first is to determine if any modifications to Draft Addendum XXXIII and the Council Amendment Hearing Document are desired, such as modifications to or removal of any of the proposed options. Once that is taken care of the Board and Council can consider approving the document for public comment. That concludes my presentation. I can take any questions.

CHAIRMAN NOWALSKY: All right, thank you very much for that, Caitlin, very much appreciated. Thanks to the PDT for their work as well, as well as staff at both the Council and the Commission for their contributions in this, since this is not just a Commission issue. We've got a lot of people working on this. My thanks to everyone.

The process we're going to go through here next is, we'll ask for questions. But what I intend to do is ask for questions on a section-by-section basis, so that Caitlin and other staff that has to answer questions doesn't have to keep jumping around, and also so that we can try to know where we are with getting through this.

It would be my intention to stop for a lunch break, after we get through questions. We'll go to questions on a section-by-section basis. I will then turn to the public for if they have any questions on the document as a whole. Then we'll do a time check at that point to see where we are. Let's start with Section 2 of the document, which is the overview, which

includes statement of the problem, background, status of the stock, status of the fishery. Caitlin, maybe you can just go back to the beginning of the presentation around about where that is, so we're there.

I will turn to the Council and the Board to see if they have any questions on the document for the overview. Again, statement of the problem, background, status of the stock, status of the fishery, questions for Caitlin or other staff on the context of the document. Okay, looking for hands, not seeing any hands, not hearing anybody jump in.

MS. TONI KERNS: You have Tom Fote.

CHAIRMAN NOWALSKY: All right, Tom, go ahead please.

MR. THOMAS P. FOTE: When I look at adding state allocations to the Council's FMPs. I think that is going to cause a lot of confusion. I'm wondering how we separate this out. You know just a little bit of history. When we tried to do this in 2002, basically in order to make it happen, New Jersey gave up 20 percent of its existing quota to basically make everybody agreeable, because it increased everybody's quota at that time.

But that was done state by state, and with state by state agreeing. Are we going to put it in the Mid-Atlantic Council, and then how do we get to New England? At least with the Commission, all three Commissioners sit, and we have this Board spread out through the states. That is my concern here, and I'm asking how do we avoid the problems? Are we going to have Council members from New England sitting there and three Council members? How do we deal with that problem?

CHAIRMAN NOWALSKY: Tom, you're asking that relative to the options in the document, or was that part of the overview and background of the document?

MR. FOTE: Well, I was looking at the one option for adding state allocations to the Council FMP, because if we have to add it to the FMP then it's the Mid-Atlantic

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Council that basically directs that. How do we do state allocations?

CHAIRMAN NOWALSKY: I think we'll come back to that topic when we have discussion on that. I think it's a reasonable question, with regards to how we're going to move forward with it. I'm not sure it's a question on the construct of the document here. Let's hold that one. We'll come back to that. Do we have any other questions here on the overview section of the document?

Okay, not seeing anything, we're going to go into the management options for the document, and I would like to take these on an option-by-option basis, again questions. The first item would be under 3.1. We'll skip status quo, we'll go to B, increase Connecticut quota to 5 percent. Do we have any questions for staff about the presentation or the document for this section? Okay, and I've got a question from Nichola Meserve. Go ahead, Nichola.

MS. NICHOLA MESERVE: I'm not sure if it's a question or a comment, but hopefully you'll allow it. I don't support removing this option. But I guess I had hoped to see some more information to support 5 percent for Connecticut. I know it was, or I think it was selected because that's what Delaware's quota is, and it is the next lowest.

But to help make an informed decision, and to show the public why 5 percent is appropriate for Connecticut, it would be helpful to have some more information about, you know the number of harvesters in Connecticut, compared to other states, or what their trip limits are now, in comparison to other states that would help provide some context to rationalize 5 percent as a number.

CHAIRMAN NOWALSKY: Well, I'll turn to staff. I don't know what comments they could add, maybe augment this discussion with PDT discussion about one, if there is anything they could put on the record now to help justify that

5 percent, or two, if they think there is anything else that could be added to the document before it went out for public comment.

MS. STARKS: I have a couple of thoughts. First on PDT discussion. There wasn't any additional information provided to the PDT to support that 5 percent, since it was proposed a while back. But one thought I had that we could look at pretty quickly, and I might be able to do over lunch, is to quickly calculate what Connecticut's landings have been as a proportion of the total coastwide quota for the last couple of years after transfers, and I could do that pretty quickly at lunch.

CHAIRMAN NOWALSKY: Nichola, is that something you would be interested in?

MS. MESERVE: Potentially. I don't want to deprive Caitlin of lunch. She's put a lot of effort into this document already. I guess it's more just a comment. In the end, I feel that I would need more information from Connecticut to support 5 percent. Maybe it's just a comment directed to Connecticut that I had hoped to see some more information to support 5 percent in the end.

I know that not too long-ago Caitlin had put out a request to the Technical Committee to get like a one pager that had each of the states trip limits, and number of harvesters and things like that that were maybe to be included as an appendix. I think that would potentially be some helpful information to include with this option.

CHAIRMAN NOWALSKY: Okay, Justin Davis, you've got your hand up. What can you add, in terms of trying to answer the question about what could be added to the document, or what may have been submitted previously to improve the justification here?

DR. JUSTIN DAVIS: Thanks for the question, Nichola, and the opportunity to talk about this a little bit. I will start out by saying, we did not submit any additional analysis to go along with this, the option for the increase to 5 percent. But we did take a look in-house when we were crafting this option, and tried to determine essentially what sort of percentage of the

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coastwide quota might we want to be able to have comparable trip limits with our neighbors. I think that went into this decision about 5 percent.

I will freely admit that one of the major rationales for the 5 percent was that we in Connecticut feel like we're particularly disadvantaged by our low quota, given the huge increase in sea bass in our local waters in recent years. But we didn't feel like it was appropriate for us to ask for a higher percentage of the quota than any other state currently has, and 5 percent was the lowest allocation, other than Maine and New Hampshire, where they have not had any landings, and don't have a real declared interest in the fishery. That was a big factor in choosing 5 percent.

My understanding is that as we move forward, if this option is in the document that goes out for public comment, then when it comes back and its time for final action, that the Board and the Council could consider some outcome that is within the range of what's proposed here. Certainly, we're proposing 5 percent.

But that doesn't mean that it's sort of all of nothing, it has to be 5 percent or nothing. The only other comment I'll make is that if there is going to be some effort to do some analysis to justify what level of increased quota Connecticut might need or deserve. We would obviously want some input into that.

I would like it to be carefully considered. I don't think the recent performance of our fishery would be an accurate measure of the potential for our fishery, because we've been operating under very restrictive trip limits, because of our low quota. I mean our fishery is operating most of the time in recent years at like an eight fish trip limit, and we've only sought out transfers over the last two years, I believe.

I don't believe prior to that we pursued quota transfers for black sea bass. I'll also just kind of make the general point that all of these options

in the document consider potentially allocating more quota to certain states, and less to other states. I'm not aware that there has been an effort to undertake a comprehensive analysis to determine what level of quota is appropriate for each state, based on some measure of fishery performance or number of harvesters, or things like that.

While I'm not saying we're not willing to perhaps provide some more information that the PDT or the Board or Council would find informative. I do feel like that is singling Connecticut out a little bit, to sort of demonstrate why we need more quota, or how our fishery might be able to handle more quota. Thanks for the opportunity to comment on that, Mr. Chairman.

CHAIRMAN NOWALSKY: All right great, thank you, Justin. I think there will probably be more discussion about this. But we did have the question about what could be offered. I'll just say to staff that I think the takeaway here at this point is that if there is anything you think you can bring to the table for the afternoon, without depriving yourself from lunch.

I don't think anybody would say no. But at the same time, take care of what you've got to take care of first. I got Joe Cimino's hand just went up, so a question. Let's stick to more questions or trying to answer the question about what additional information could be submitted to support Option B. Let's not have more comment or discussion about it, per say. But Joe, if you've got something to add, either as another question or to help answer the question about what else we have to support it, please go ahead.

MR. JOE CIMINO: I agree with Justin that perhaps an analysis over lunch would be something that is singling Connecticut out. I don't really think that that is needed or necessarily appropriate at this time.

CHAIRMAN NOWALSKY: All right, thank you for that Joe. I think that is a fair point, with regards to if there is going to be some analysis, it should be information that can be presented that would be informative across all states, not just one. I think that is a reasonable point, all right.

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I'll move on to questions for Section C of 3.1, Dynamic Adjustments to Regional Allocations. Questions on this section. Okay, I'm not seeing any hands, not hearing anyone speak up. Let's go on to Section D, questions on the trigger approach as presented. No hands. Okay, I've got a couple hands that just went up. First Chairman of the Council, Mr. Luisi.

MR. MICHAL LUISI: Just a question about the comment that Caitlin made when she went over this. We're looking at the different trigger values, whether its 3 million pounds or 4.5 million pounds. It was discussed that there would be room in between those two to make some adjustments.

However, we have the Commercial/Recreational Allocation Amendment, which we'll talk about next week, playing into this, in that the adjustments made in that amendment could ultimately affect the trigger option, if it were selected as the final alternative in this action. To the point where the triggers may be set at a level where they cannot be attained, due to adjustments in the overall allocation between commercial and recreational fisheries.

My question would be, how much flexibility would there be ultimately at the end of the day, if this Amendment is finalized, and we select one of these triggers. Then we have the follow up action of the Commercial/Recreational Allocation Amendment affect the decisions made here today. I mean, how much flexibility would there be to revisiting triggers, without having to go back through another full process to make those adjustments? Would that be something that could be modified, based on the results of the other amendment?

CHAIRMAN NOWALSKY: I think the numbers are what they are here in the document. I'm not sure, I'll turn to staff. Is there anything short of an amendment, could this be done? Obviously, we're doing this as an addendum at

the Board level, so it's a different process than amendment at the Council level.

If we felt the need to go back and revisit these triggers, I'll turn to staff. Would we need a full amendment to do those in the future? Are there thoughts about how the timeline on this could sync up better with the Rec/Commercial allocation, in order to be better informed before we make a final decision on this?

MS. STARKS: I want to say something first, and then I think Julia might have some things to add. One is that these values that are shown on the screen now are not final. You could change these today, if you wanted to give yourself a more broad range, and that means after public comment the Board and Council could select something within that range. Then Julia has some comments on if the state allocations are included in the Council FMP, what the process would have to be for adjusting a trigger later, if it was found to be not doing what we wanted it to do.

CHAIRMAN NOWALSKY: Go ahead, Julia.

MS. JULIA BEATY: Yes, I agree with Caitlin that a simple thing to do might be just changing the range of trigger values that are in the document right now, and then we can just easily move forward with that. Then in terms of changing the trigger values through a future amendment or framework.

I think if we go all the way through this amendment, and take final action on something, and then later want to change the trigger value. I think that could pretty easily be done through a framework, if it's already been fully considered through this amendment. But if you're talking about taking this out to public hearings with the range shown on the screen here, and then later changing the trigger value, before you take final action on the amendment.

That would change the timeline. But if you're trying to say that the first option of go all the through this amendment, implement something, and then in the future change the trigger value. I feel like that could be done through a framework, if trigger values in general were considered through this action. GARFO

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might want to correct me on that, but that would be my take on that.

CHAIRMAN NOWALSKY: What I'm hearing, Mike is two ways forward that are not necessarily mutually exclusive. One would be to, if your concern is that these triggers are not going to be compatible with final action on the Rec/Commercial Allocation Amendment, we could have discussion later today about modification to these trigger values.

It sounds like once this Amendment was taken and was finalized, in the future then the option would be a framework at the Council level, and I assume an addendum at the Commission level, this wouldn't be done via specifications, I wouldn't think.

MS. STARKS: Correct, I think we would need an addendum to change it.

CHAIRMAN NOWALSKY: Okay. Does that answer your question, Mike?

MR. LUISI: It does, thanks. I do have some comment. I'll hold off for now, just regarding overall the parallel track that we're on with this amendment and the Commercial/Rec Allocation Amendment. I'll hold off on that until this afternoon. Thank you.

CHAIRMAN NOWALSKY: Any other questions on this section for Trigger Approach? I think I had seen Justin's hand, but it's now down. I'm guessing that he probably had a similar line of questioning that was answered here. If I don't see Justin's hand go back up or chime in, I'll assume he got the info he needed. Okay, not seeing any other hands or hearing anything, let's move on to Option Set E, Trigger Approach would increase to Connecticut and New York quotas first. Questions for staff about this option. Nichola Meserve.

MS. MESERVE: It's not actually about E, but I think we skipped over some of the sub-options

under the trigger approach, and I wanted to ask a question about one of those.

CHAIRMAN NOWALSKY: Please go ahead. It was my intention for questions with regards to sub-options to come up under that, so yes if you had, please. Anything under D, go ahead, and I'll just offer that if somebody has a question with something that we've already gone past, and feel the need to go back, I'll just ask for one more round of questions at the end. But let's go ahead and finish up on D here now, go ahead.

MS. MESERVE: Sub-option D2-A is the even distribution of surplus quota to all the states along the coast from Maine through North Carolina. When we talked about bluefish half an hour ago, there was a similar option, and the FMAT had voiced its opinion that equal amounts were, maybe not the most equitable way of doing that, and they have some bigger changes for some states than others.

I feel similarly with that here, wondering if FMAT had that discussion as well, and how in my view this option doesn't respond to the objective of the amendment, which is to respond to changing distribution. I'm just wondering if the FMAT had some similar, or any thoughts on under those considerations when it came to Sub-option B2-A.

CHAIRMAN NOWALSKY: I'll turn to staff for that.

MS. STARKS: The PDT did discuss this, and they did comment that it doesn't really seem to reflect the goal statement for the action, but it was included by Board request when these options were originally crafted back through the PDT and Working Group process. That was noted in the PDT discussion, and if its desired obviously the Board and Council have the ability to remove it today.

CHAIRMAN NOWALSKY: Nichola, does that give, it may not make you happy the answer you hear, but does it at least answer the question at this point, with regards to the PDTs thoughts on it?

MS. MESERVE: It does. I appreciate that. I mean, I don't know if you're looking for this at this point, but I

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would support removing that option. You know if there are other Board members that feel the same way, I would just encourage them to speak up about that as well.

CHAIRMAN NOWALSKY: Okay, we'll stick to questions now, and we'll take up action after we break. All right, so getting back to Option E, the trigger approach with increase to Connecticut and New York quotas. Any questions on that? Okay seeing none, Option F, percentage of coastwide quota distributed based on initial allocations, question on that? No hands, no voice. Regional configuration options, Option G. We'll start with John Clark.

MR. JOHN CLARK: I just had a question, just a clarification. It's probably come up before, and I'm sorry if I missed it. I noticed for this one, the fiscal area is 616, which seems in recent years to have by far the biggest landings. For this one, New Jersey would be in the southern region. But half the landings of 616 would go to the south after the north, or something to that affect. But I'm just curious for all the other reallocations in the assessment. Is 616 always considered in the northern region on the assessments, or is that split between the north and the south?

CHAIRMAN NOWALSKY: I'll go ahead and let staff answer that definitively.

MS. STARKS: Thanks, John, this image on the screen is showing the dividing line of the spatial sub units used in the assessment, and it does appear that 616 is included in the northern region.

MR. CLARK: Okay, so as I said that. I mean that is a huge amount of harvest from probably up from the entire management area. Even though it is considered for the assessment, as far as the north. Like I said, I just want to clarify that for some of the options that kind of depend on that north/south divide. A huge area for black sea bass is actually really kind of

straddling the line between the north and south.

MS. STARKS: If I can respond. I do want to note, John that that is a good point, and that is kind of one reason why that second option for a three-region approach with New Jersey kind of split between the two regions, in a way, was proposed.

CHAIRMAN NOWALSKY: Any other questions on regional configuration options, or anything else in Section 3.1 that you feel needs to be answered? Okay, not seeing any hands. We'll go to 3.2, Management Options for changes to federal regulations, and we'll take both of these together, 3.2.1 and 3.2.2.

We did have the question earlier from Tom, with regards to just how this would work functionally, once these allocations were put in place. Tom, if you would like to try to summarize that question again, and we'll see if we can get a more definitive answer for you, unless you think its more along the lines of just a general comment about being concerned about the process. I'll just turn back to you there.

MR. FOTE: Yes, my concern is how do we separate? The Commission does an easier way of doing this. They have a system put in place and it goes through. We're not restricted about the same as the way the federal rules are in place of basically setting it up. When we add the Council's, do we add New England and the Atlantic Council, since it crosses those boundaries?

How do we handle that with only one New England Council member on ours? That's why I'm saying, are we better off just leaving it just on the Commission side, or how would it work if we put it on the Council side? How do we make up for the distribution and handling in that way? I don't know if that is clear, but that is what my concerns are.

It just makes it more complicated. I know we do things like forgiving overages and things like that. We were talking about that in the latest part. But we basically have allowed states that haven't gone over the whole quota to basically absorb it. New York, Connecticut over time have not had to do dramatic

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cut backs if they were under the Council system, we would have to do that. I'm not sure how that would work, and that is why I'm concerned here.

CHAIRMAN NOWALSKY: Does staff or GARFO have anything to add here? I mean we do manage black sea bass to the Mid-Atlantic Council. There are a number of states that are on the Board that fall north of the Mid-Atlantic Council, but we've been managing black sea bass throughout its range north of Cape Hatteras, even though that encompasses states north of the Mid-Atlantic Council range. We've been managing it in that direction anyway.

I don't know if staff or GARFO want to add anything else that much would really change here. What would change, in terms of our processes, there are three bullet points up on the screen here right now that I think would be specifics that would change, with regards to who is monitoring landings, how transfers would be managed. I think these are three very discreet changes that you see here. Is there anything else staff would want to bring to our attention, with regards to what would change by including this in the federal FMP as well, the state allocations.

MS. BEATY: Hey Adam, this is Julia, I can respond to that, unless GARFO wants to jump in. To address some of those questions that Tom brought up. No, we're not planning to bring in the New England Council on this. This would stay just jointly managed in the Mid-Atlantic Council and the Commission.

We do have New England representation on our Summer Flounder, Scup, Black Sea Bass Committee, and then the question about what would it mean, in terms of payback. There are alternatives for that in the document, so it could stay exactly the same as it is now, in terms of when paybacks are required, or it could be handled differently.

But just because it's added to the Council's FMP, if that's the way it goes. That doesn't necessarily require any changes to how the paybacks are dealt with. That is a decision that would be made, should that change or not. But if they are added to the Council's FMP, the allocations, then it would require that GARFO would monitor the state landings, and you know monitor them against the state allocations.

But that would have to shift from the Commission to GARFO, and then also if there are any transfers among states, then GARFO would handle that. You could think of it as almost like an administrative change, in terms of who is monitoring and handling all that. But it wouldn't require any changes to when you have to do payback.

There are alternatives for that, about the decision point that could be made. Just a reminder that the goal for today is just to approve these range of alternatives in the document for public comment. We want public comment on if these should be added to the Council's FMP, and if any of those other changes should be made. I don't know if that helps, Tom. Think about it. Let me know if there are any other questions that I didn't answer, because I feel like there were a few questions bundled together there.

CHAIRMAN NOWALSKY: Thanks for that Julia, much appreciated. Joe Cimino.

MR. CIMINO: Yes, just a question. Am I wrong, in the same management plan, isn't that how we do summer flounder? It is recognized as state by state and managed by the Atlantic.

CHAIRMAN NOWALSKY: Does staff want to chime in? That would be my interpretation is that basically what we've been doing with summer flounder would translate to sea bass, would be my thought.

MS. BEATY: Yes, this is Julia again. There is just one nuance to that is that the FMP for summer flounder does require paybacks of state overages, regardless of whether or not the coastwide quota is exceeded. Again, that is something that if the black sea bass allocations are added to the Council's FMP that doesn't have to be done for black sea bass too.

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That is a decision point that can be made. But in general, the other considerations are the same for summer flounder. That is managed under both FMPs. GARFO handles transfers, monitors, quotas to state level, and things like that. Issues related to in-season closures and overage payback, there could be some differences between how it is done for black sea bass and summer flounder. We wouldn't have to make it the same as summer flounder in those aspects.

CHAIRMAN NOWALSKY: I saw a couple hands had gone up. Two of the three went down after that, Julia, so great job on your part. One hand is still up, I've got Chris Batsavage.

MR. CHRIS BATSAVAGE: I didn't recall seeing it in the draft document, and if its there I apologize. But just the differences in how quota transfers are handled, the difference of timing of how quota transfers are handled at the ASMFC level versus the GARFO level, where you know for just regular quota transfers.

Then GARFO requires those to occur by December 15, unless it is for safe harbor reasons, while ASMFC allows for quota transfers to occur up to 45 days after the fishing year ends. If that is not in there, does staff and others think that is an important distinction to make for the public? I mean it's something that matters a lot to folks like me who do this for my agency, but I didn't know if that is something that is important to include for the public as well.

CHAIRMAN NOWALSKY: Does staff have anything to add about the history of discussion with transfers in this document?

MS. STARKS: Yes, Adam. Chris, the information that you just said out loud is in the document on Page 21, under Option B, 3.22 Option B, so it does describe the differences in timing between GARFO and the Commission.

MR. BATSAVAGE: Thanks, my apologies.

MS. KERNS: Adam, I just would like to note that there is not only a difference in timing, but there is also a difference in rationale. The Commission usually allows for end of the year, so the bookkeeping transfers, and NOAA Fisheries does not usually approve transfers for those types of transfers at the end of the year. There is a difference in approvals as well, the rationale for those approvals.

CHAIRMAN NOWALSKY: All right great, thank you for those clarifications. Nichola Meserve.

MS. MESERVE: The point that Chris raised about one of those differences and the 45 days after the season for allowing transfers. Is there also a difference that should be highlighted in the speed at which transfer requirements are completed? I know when we send them to the ASMFC for menhaden and sea bass, you know it is a one-day turnaround if that. If there is a difference when it comes to a NOAA Fisheries approval of a transfer, plus I think that it would be beneficial to point that out as well in the text.

MS. STARKS: I believe that would be a simple thing to add after today.

CHAIRMAN NOWALSKY: All right, I'll jot a note down here to myself about that, because yes, in terms of a question, no that information is not explicitly included in the document. But I think that is a reasonable thing to see about getting consent about later on. Okay, I'm not seeing any other hands up on this section.

I'll ask if there are any questions from the Board or Council on the timeline next steps that were presented. I think we would have more discussion about that, including the public hearings, depending on the motions for releasing this document for public comment. But any questions about next steps or a timeline that you would need to be informed about how to move forward.

Okay, seeing none, in the way of hands or voices, for anyone who is just on the phone. Let me go ahead and turn to the public to see if there are any questions from the public, regarding the presentation of this for public comment. Okay, I'm not seeing any hands from the public or hearing any voices. Tom, I see you've got

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your hand up, something you wanted to ask about the timeline next step?

MR. FOTE: Not the timeline, but the joint public hearing comments.

CHAIRMAN NOWALSKY: Yes, well I think we'll have discussion about that, depending on where the conversation goes for releasing this. But did you have a specific question about the hearings right now that you need to ask?

MR. FOTE: I know they said it would be easy to do, you know regions. But I think that is going to be a real problem, and I wanted to have some discussion on that. But I don't know where appropriate place is to do that.

CHAIRMAN NOWALSKY: We'll have discussion about it before we conclude today. Mike Luisi, you've got your hand up?

MR. LUISI: Yes thanks, Adam. I got in just a second late to ask a question regarding this. Just for the timeline. I see here that we would make joint decisions in December, if this moves forward as proposed. Then in January the Addendum would become effective for the Commission, with a follow up in 2021 by the Feds through Council documents.

The question is to staff, when do the actual allocation changes happen at the level for which states like mine would make the adjustments for our individual transferable quotas? Would it be for the 2021 fishery, or would we have to wait until the federal process is complete, and we would be looking at the 2021 fishery, when everything is done for us to implement new allocations to our fishermen, based on adjustments as a result of this document?

CHAIRMAN NOWALSKY: My initial reaction to that, Mike, before I turn to staff would be that it is joint, and we may or may not have different implementation timelines. I would like to think that ultimately the Board would set some implementation date that would be

complementary to a final rule being promulgated by the Service. But I'll turn to staff if they have any other thoughts about that.

MS. STARKS: Toni, do you have thoughts? I personally am not sure.

MS. KERNS: The Board determines the implementation date for a document, so it is up to the Board as a collective to determine, to figure that out. I would say that I guess it would be a question to the states, and how it would impact your allocations to your ITQs, because the quota changes from year to year, so how much you have to give to your ITQs changes from year to year. While I understand that it may be a little bit different in how the change happens, but I don't think that that would be much different in terms of process, in that sense.

CHAIRMAN NOWALSKY: My thought would be that this next to last line here, January 2021 Addendum XXXIII effective for Commission. That line is dependent on the Board setting that as an effective date, when final approval was taken by the Board in this timeline in December, 2020.

At that point in time the Board would say whether or not Addendum XXXIII would in fact be effective for January '21. Mike, you wanted to follow up? I think that's the direction we would head is that while this is what is on the timeline here, it would ultimately be at the discretion of the Board, when they vote for final approval on this document when this effective date actually is.

MR. LUISI: It's understood, it's just an important piece to all of this, because as I mentioned earlier, we have another parallel amendment happening that deals with allocation as well. I think it's really important for us to all understand what the intent would be. If I were a state receiving more allocation, based on a decision made by the Council and the Board off this Amendment and this Addendum.

If I were getting more allocation, I would hope that that would be available to me in 2021. However, we don't need to get into comment. That was my question. It sounds like it is not specifically defined as

to which calendar year we would be managing our new allocations under, and that would be for a Board discussion at a future time. I just think it adds a little bit to the complexity of what percentages are we going to be using in 2021 versus 2022. Thanks, I'll leave it there Adam, for now.

CHAIRMAN NOWALSKY: All right, so with that having gone through presentation of the document in question. I think where we're at here is, we're going to Mike, with your agreement as Chair. We'll go ahead and break for a half hour. We'll reconvene as a Board and Council at 1:15, at that time I think what I would like to do is to allow some time for some general comments, maybe 15 minutes or so, about this as a whole. Then after we've taken a few minutes for general comments, at that point in time I would then ask for some motion to be made with regards to how the Board and Council want to move forward with that. I would ask everybody over lunch to come back at 1:15, be prepared to offer some comments initially, with a motion shortly thereafter, and we will go from there. Any objections, Mike?

MR. LUISI: No, I'm good with that, Adam, thanks.

CHAIRMAN NOWALSKY: Very good, so with that we are in recess until 1:15.

RECESS

RECONVENE

CALL TO ORDER

CHAIRMAN NOWALSKY: All right, I've got 1:15 here on my end. We'll give everybody another minute or two to get settled in, and we'll resume the Summer Flounder, Scup, and Black Sea Bass Council Board Meeting. All right, we'll get started here. Anybody who is not here can raise their hand. All right, seeing no hands then I guess that means we can get started.

**CONSIDER DRAFT ADDENDUM XXXIII AND THE
MAFMC AMENDMENT REGARDING
COMMERCIAL BLACK SEA BASS (CONTINUED)**

CHAIRMAN NOWALSKY: Welcome back everyone. I hope you had some time for lunch. Again, we're convened as the Summer Flounder, Scup, and Black Sea Bass Board with the Mid-Atlantic Council, discussing Addendum XXXIII and the Council Amendment regarding commercial black sea bass. Our plan here for the next hour to an hour and a half is going to be to first allow a little bit of time for some discussion/comments people would like to make.

In about 15/20 minutes time, well when it looks like those comments have concluded, I will go ahead and ask for someone to make a motion, with regards to how this joint body wants to proceed, with respect to releasing this hearing document for public comment. Then we'll go ahead and debate that or subsequent motions.

Before we take a vote on a motion, we'll allow some public comment, as well as time to caucus. With that I will open the floor to hands for people that want to make comments on a proposed way forward. All right, well I'm not seeing any comments. All right, we've got one hand up. Ellen Bolen, go ahead, please.

BLACK SEA BASS COMMERCIAL REALLOCATION

MS. ELLEN BOLEN: I will I guess kick off what I think is probably going to be a broader discussion, more about the timing of the document than the contents of the document. I think back at the December Council meeting I first expressed my concern with moving this document forward concurrently with the Commercial/Recreational Reallocation Document for a variety of reasons. As I've gone through the document for today's meeting, and started to go through the Commercial/Recreational document for next week's meeting.

I have the same concerns for a couple of reasons, sort of the overall is that we are trying to decide the size of the pie, and trying to divide the pie all at the same time, which I think creates a lot of challenges for managers to understand how the different actions will impact their constituents, and I think it also creates a

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lot of uncertainty in the industry when these changes are going to come down, what it means for them. I'm particularly sensitive to that point right now, at a time in a year on the industry, I mean everybody has gone through some pretty significant upheavals, and the consistent thing we hear from them is, you know make changes but try to smooth the curve when you do. That is one of my concerns. The other thing I have is that not knowing what the resulting Commercial/Recreational reallocation will be, assuming there is a reallocation I think impacts different alternatives differently, which I think creates additional problems down the line.

As Mike Luisi mentioned earlier, and staff mentioned earlier, it's particularly problematic for the trigger approach, because we don't know sort of how different triggers will interact. We ran some back of the envelope calculations, and depending on the different alternatives for Commercial/Rec, you're looking at a commercial quota somewhere between 6.5 and like 2.92 million pounds.

Again, those are the bookends, but I think there are still some that are, you know around 3 or below 4. Depending on if we were to pick a trigger option, it could result in not actually trying to achieve what we're doing, and that's an option I think that is very intriguing to a lot of people. I'm going to pause there, I think, and express my ongoing concern for moving these processes concurrently.

CHAIRMAN NOWALSKY: Thank you very much, Ellen. Additional hands? All right, I'm not seeing any hands. Given that there are no hands up for additional discussion. Well we've got one. Go ahead, Tom Fote.

MR. FOTE: Sorry, I just got back. Are we going to talk about how we do the public hearings now or later?

CHAIRMAN NOWALSKY: I think we can hold off on that for right now yet, Tom.

MR. FOTE: Okay, so when you get to that point, please recognize me then.

CHAIRMAN NOWALSKY: I will make sure that that topic does not go undiscussed. Thank you. I think where we're at here at this point, is that I am looking for either a specific suggestion request for a modification to the document. If there is a specific request for modification to the document, we can take it up. If there is what appears to be unanimous direction, we can try to take it up by consensus. Otherwise, we'll need motions for that.

If somebody wants to move forward with a motion on the document as a whole, moving it forward now. I think Ellen was suggesting possibly some other timeline, I'm not sure what that is. But if she has a motion, so that is what I would be looking for, one, discussion on changes to the document, with specific suggestions for modification and/or two, a motion on the document as a whole. I've got three hands up right now, I'll try to do them in the order I thought I saw them go up, with Jay McNamee, Ellen Bolen, and then Justin Davis. Let's go to Jay.

DR. JASON McNAMEE: Actually, before I start. I guess I was of a mind to throw a motion out. Is that okay, Mr. Chair?

CHAIRMAN NOWALSKY: Yes, please. Go ahead.

DR. McNAMEE: Again, before I make the actual motion, I'll just note. I think this could work with potential adjustments to the timeline, so I'm going to go ahead and move forward with it. **My motion is, I move to approve Draft Addendum XXXIII and Council public hearing document, as presented today, for public comment.**

CHAIRMAN NOWALSKY: We have a motion to approve the Addendum and Amendment as presented today, for public comment. That motion by Dr. Jason McNamee from Rhode Island, that is on behalf of the Board. Let me first look for a second to that from the Board. I understand, I've got Ellen and Justin. I have you in the queue for hands, but only leave your hand up right now if you want to second it. Justin, you want to second the motion?

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DR. DAVIS: That is correct, Mr. Chairman.

CHAIRMAN NOWALSKY: Okay, we'll accept a second from Dr. Davis. We would need a like motion from the Council. Is there someone from the Council that would like to make this motion? Maureen Davidson, you'll make this motion on behalf of the Council? I saw Maureen's microphone go green, but I didn't actually hear anything. Did staff hear anything from Maureen?

MS. MAUREEN DAVIDSON: Sorry, I was doubly muted. Yes, I would like to make the motion for the Council. I think that the Addendum covers a wide variety of options that we should be able to present to the public, and look for comment.

CHAIRMAN NOWALSKY: We're looking for a second to the motion from the Council. I see Laurie Nolan's hand up. Laurie, are you seconding the motion for the Council? Please be sure to unmute yourself both in the webinar and on your local device so we can hear you.

MS. LAURIE NOLAN: Yes Adam, if you hear me, yes.

CHAIRMAN NOWALSKY: Yes, Laurie, thank you very much. We have a motion on behalf of the Board and on behalf of the Council. Discussion on the motion. Jay, did you want to offer anything else on this motion, or did you feel your comments before making the motion encapsulated it?

DR. McNAMEE: Maybe just to quickly reiterate, thank you, Mr. Chair. Generally, everything Maureen said I agree with. I think there is a lot of different types of options in here, and a fair amount for the public to consider. The timeline changes, I think that's okay. But the document itself will be good whenever it's ready to go out for public comment.

CHAIRMAN NOWALSKY: All right, Maureen, did you want to add anything additional as maker on the side of the Council?

MS. DAVIDSON: No thank you, Adam, no. I'm good, thank you.

CHAIRMAN NOWALSKY: All right. What I'm going to do now, is because I think there are some people that are going to want to speak both for and against this, is I'm first going to ask for if everyone could put their hands down. Let me ask for a show of hands that right now would like to speak in favor of the motion. I've got two hands, Justin and Nichola that want to speak in favor of the motion. Emerson, and I'll go back and ask again.

This isn't going to be the last crack at this. All right, put those hands down. Let me see a show of hands of people that are going to speak against the motion. I've got Ellen Bolen, and I've got Joe Cimino. All right, great. What I'm going to do is I'm going to go ahead and start with Justin, since he seconded the motion, and then I'll go back and forth between for and against, and then we'll see where that takes us. Go ahead, Justin.

DR. DAVIS: I'm in favor of this motion. I think it's time for us to send this document out for public comment. I'll remind folks that even though at the beginning of the presentation in the last segment of the meeting, it was stated that this action was started in October of 2019. If I recall correctly, the PDT was formed before we initially initiated the action, and this is really something that we've been working on for much longer than since October, 2019.

I believe there was even a Working Group before the PDT that started developing options. This is something that has been worked on for quite a while now. I think there is a number of really excellent options in the document that will really, you know provide a model for not only this action and this species, but reallocation decisions for other species and other management plans. I think really, we're at a point now, we've discussed this enough, there are enough great options in the document. It's time to take the next step and get it out for public comment.

CHAIRMAN NOWALSKY: We'll go to Ellen Bolen next.

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MS. BOLEN: Sure, I have a question for the maker of the motion for a comment that he made. This is to approve the draft addendum, and then he said something regarding the timeline. I'm curious if he was talking about the implementation timeline or the timeline for which we would actually send it out to the public? My question is, are these two different actions, approval of the document and when we send it out, or is it all the same action?

CHAIRMAN NOWALSKY: By speaking and voting in favor of these motions, this would be to go ahead and release this document for public hearings, with any other final edits that are needed to be made. The document would be out for public comment in the near future, with public hearings occurring later this year.

MS. BOLEN: Okay, thank you.

CHAIRMAN NOWALSKY: Jay, if you had something different that you were intending in the motion, please let us know. But that is my read of the motion as it's up on the board. Jay, did you have anything else to add?

DR. McNAMEE: Yes, sorry. I had raised my hand. I was trying to be formal. When I made the motion I didn't, I'm going to start from this direction. In making the motion, what I was trying to do is approve this document. I then made the comment about the timeline, because I thought, were it the desire of either the Board or the Council to delay actually sending it out to allow for in-person meetings or you know a lot of the stuff that we've been talking about, with regard to our current situation with COVID.

I didn't see those as being mutually exclusive. I thought we could approve the document, meaning we wouldn't need to work on the document anymore, the stuff that is in there is adequate and ready for public perusal, and then a second motion kind of specifying when it would go out could happen from there, if somebody wanted to change it. That was my intent with the motion.

CHAIRMAN NOWALSKY: All right, so let me go ahead and read the motion, and then we might have to start this over. The motion as we currently have it attributed to you as the maker for the Board is; Move to approve Draft Addendum XXXIII, and the Council public hearing document as presented today for public comment.

That would start the process of getting it posted on the Council/Commission websites, would begin the process of scheduling public hearings. I think if this was not your intention. I think if it was your intention for that process to actually begin at some other point. I don't think is the correct way forward. I think we would want to look for some alternative motion. Let me first ask, if it is your intent to start the public comment process now, and based on that answer I'll offer us a way forward.

DR. McNAMEE: I guess from my perspective; I would be fine with it starting as soon as was appropriate. I guess my comments again were just, I didn't think my motion precluded someone else offering an alternate timeline. I'm fine with it starting right away.

CHAIRMAN NOWALSKY: Let me turn it to staff then, because I don't think we would typically approve a comment for public comment, but not start the process until sometime in the future. Again, I'll look to staff for direction on this. Mike, as Council Chair, please add your thoughts to this as well.

I would think if the intent ultimately today is not to start that public process until sometime in the future, another either not making a motion today, and just making it clear on the record that we would go ahead and take this up at some future date, or an explicit motion to postpone action until some future meeting, I think would probably be the better way forward. But I'll turn to staff if there is any precedent for a vote like this, but not starting the process, and I would turn to my Chairman at the Council level as well.

MR. LUISI: I'm sorry, I was distracted. I had a call come in quickly. Can you just repeat your question to me? I heard my name.

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CHAIRMAN NOWALSKY: Okay, no problem. We've got a little bit of discussion right now about whether there is the option for voting to approve this for public comment today, but not actually starting the process until some future time, scheduling public hearings, et cetera, based on concerns about a desire to do this in person, or whatever other individual concerns there may be. The question is, I'm not familiar with any history of approving a document for public comment, but delaying the start of that public process. My initial thought as Board Chair is that if that is the intent of the Board today, to either not take action on this today, or make some motion that postpones further action, until some time-sensitive or other actions that we knew when we would take this back up again.

That is my inclination. But I would turn to you for your thoughts, as well as staff thoughts from both the Commission and the Council about doing this motion, potentially voting in favor of starting public comment, but not actually starting the process in the immediate future.

MR. LUISI: I followed along there; I just missed the last couple seconds. Yes, so my thoughts on that are that if we were to approve this motion as it stands, unless it's modified, I would say that the intent would begin to schedule and move forward with public hearings, as normal. I think if there is an intent, if somebody has an interest in postponing to sometime certain, whether that is a certain meeting.

You know we have a few meetings coming up. I think if there is an intent to delay this action for whatever reason it might be. We've heard in-person meetings, COVID issues. We heard some timing issues as a result of having another amendment dealing with allocations as well. I think what we would need, is we would need a substitute motion that may do both.

It could approve the document, so that we're not inclined to revisit it again. But it would delay public hearings to some certain time in

the future. My suggestion would be, if that is the intent of a Board member or someone on the Council, to make a substitute motion to that intent, and we can take that up if it's seconded. That's my thought.

CHAIRMAN NOWALSKY: Are there any other comments from staff with regards to that, because I think where I'm inclined to go right now. One option, Jay is maker of the motion, and from Ms. Davidson and the seconders, is if everybody wants to withdraw the motion with the consent of the Board. We could withdraw this motion.

If you're comfortable with leaving this motion as is, understanding that as written it means we're going to start the process in the near future, and then we can continue going through my list of speakers, and see if the motion gets substituted or amended, to delay actually starting something. Let me turn back to Jay. Jay, are you comfortable with the motion as we've discussed it right now, letting the Board do with it as they see fit, with regards to substituting or amending it, or are you going to request withdrawing the motion?

DR. McNAMEE: No, I'm comfortable with the motion, so I would be happy just proceeding forward and seeing what happens.

CHAIRMAN NOWALSKY: All right, is there any objection to that from Ms. Davidson, Ms. Nolan, or Dr. Davis?

MS. DAVIDSON: No, Adam, I'm good. It was my intent that we would move forward with the public hearings.

CHAIRMAN NOWALSKY: I'm glad that we had that discussion. We're going to go ahead and leave the motion up as is. It is clear what the intent is right now. Hopefully it is clear to the rest of the Board and Council what actions would be needed here if they want to change the timeline. Let me go back to Ellen. You had asked the question. I think we've got your question answered at this point, with regards to where the motion stands and the intent of it as of right now. I'll turn to you if you have any further comment on it.

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MS. BOLEN: Based on the answer to that question, I do have a substitute motion, if now is the appropriate time to make that.

CHAIRMAN NOWALSKY: Please, go ahead.

MS. BOLEN: I move to postpone further action on the Draft Joint Black Sea Bass Commercial State Reallocation Document until the August 2021 meeting to allow progress on the commercial/recreational reallocation amendment. If I get a second, I will provide a little bit of additional clarity in addition to what I've already said.

MS. TINA BERGER: Maya that's 2021.

MS. MAYA DRZEWICKI: Yes, I didn't get the full motion. If some people could help me fill in the gaps.

MS. NOLAN: I can type it in the box if that would be helpful.

MS. DRZEWICKI: Yes, whatever works.

CHAIRMAN NOWALSKY: All right, so we've got a motion coming up here from Council. While we're working on getting that up on the board. Mike Pentony, did you want to just speak with regards to the range of motions, or did you have something pertinent to share relative to what occurred right prior to this motion we're working on now?

MR. MICHAEL PENTONY: No, I just had a comment/question, really directed at the Council piece of this action, which is, and this is in response to the original motion. Just to note that I think typically when the Council gets to the point of approving a draft amendment to take out to public hearing, there is at least some discussion around selecting preferred alternatives to take out to the public for review, so that the public has some sense of the direction the Council is intending to go.

It does seem like, although we walked through all of the issues that are being covered in the Amendment, there really hasn't been any discussion around preferred alternatives at this point. I just wanted to raise that point/question for the Council, recognizing that the Commission process through the Addendum is often quite different.

CHAIRMAN NOWALSKY: All right that's great. I think that is important information, and certainly going to be relevant to this next motion here. Did you want me to keep you in the queue of speakers here, or was that just the one point you wanted to make right now?

MR. PENTONY: Yes, that was the only point I had, thanks.

CHAIRMAN NOWALSKY: Do we have Ellen's motion up at this point? Ellen, is what you see on the screen what your intended motion is, and if yes, I'll then ask you to read it into the record.

MS. NOLAN: It is.

CHAIRMAN NOWALSKY: All right, please go ahead and read it, and then state whether you're making it on behalf of the Board, the Council or both, please.

MS. NOLAN: Sure. I move to postpone further action on the Draft joint Black Sea Bass state/commercial allocation document until the August 2021 meeting to allow progress on the commercial/recreational reallocation amendment, and I'm making this on behalf for both the Commission and the Council.

CHAIRMAN NOWALSKY: Since the last motion we asked for a second first for the Board, I'll go to the Council first looking for a second this time. Do I have a second from the Council for this motion? There are a number of hands that are up right now. I'm sorry, I was jotting notes down. If you could put your hands down, and the first hand that goes up after that I will go ahead and accept as the second. That is going to be Tony DiLernia, sorry, Steve.

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Tony DiLernia is going to be the seconder for the Council. I will then turn to the Board; do we have a second for this motion from the Board? The first hand up from the Board was Tom Fote. I'll just confirm those seconds. Tony DiLernia, you were seconding this motion on behalf of the Council, correct?

MR. TONY DiLERNIA: Correct.

CHAIRMAN NOWALSKY: Okay, and Tom Fote, you were seconding this motion on behalf of the Board, correct?

MR. FOTE: Correct.

CHAIRMAN NOWALSKY: Okay. Let me go ahead and reset my speaker list, and then I'll ask for a set of speakers. Where we were at was, we were with Ellen, who was speaking. I'll turn to her first for further rationalization on the motion. Then the list of speakers that I had was Nichola, Joe Cimino, Emerson Hasbrouck.

I will go back to those people in that order after Ellen. Additional people that want to speak. After I go through that list, I will then go back and ask for a show of hands for people that want to speak in favor and in opposition to the motion. Ellen, do you have anything further to add regarding justification for the motion?

MS. NOLAN: Sure, thank you. Just a quick addition to some of what I've already voiced, which is I think it's challenging to figure out what is the suite of available options to both Virginia as well as northern states around this issue. Allocation is a tough decision, and one that we don't enjoy having to make time and time again. I think it's really important to get it right the first go round. You know, to be very blunt, Virginia recognizes that this stock is expanding and we will need to address this. This is not intended to not do this. This is intended to be able to do this once, and to do it right, so thanks.

CHAIRMAN NOWALSKY: Bob Beal, you put your hand up. Did you have something to add for us, some correction for me administratively or guidance here? I think staff has to unmute their boss again.

MS. BERGER: Bob, you're unmuted.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Thank you, Tina. Yes, they like to keep me quiet. It's a plan. Just a quick comment on the motion, not in favor or against it obviously. But technically this is not a joint document. The Council and Commission agreed to do two parallel documents, our Addendum XXXIII, and then the Council's Amendment. Both bodies agreed to work in parallel and not make any decisions independently. I think you know, and that is just that (breaking up).

CHAIRMAN NOWALSKY: You're breaking up on us, Bob.

MS. KERNS: Adam, I think I can try to finish what Bob was saying, if that is helpful.

CHAIRMAN NOWALSKY: I'm sure Bob appreciates you finishing his thoughts for him. Go ahead.

MS. KERNS: I don't know about that. These are parallel documents, not a joint document, while we tried to craft a document to be as like and similar as possible. Obviously, the Council has an Amendment, we have an Addendum. We're trying to work in lock step together, to make the choices together as we had agreed to back over a year ago. We may need to.

CHAIRMAN NOWALSKY: Is the takeaway here that we need to change the language of this motion to be more similar to the language of the original motion that reflected two separate documents, or do you feel that we need some different scope of motions all together?

MS. KERNS: I think if we just said further action on the draft Addendum and the draft Amendment, you know the Commission's draft Addendum and the Council's draft Amendment that would work.

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CHAIRMAN NOWALSKY: Is there any objection by those associated with making this motion to perfecting the language as such?

MS. NOLAN: No.

MR. FOTE: No.

CHAIRMAN NOWALSKY: All right, so let's go ahead and get that modification done, hopefully it can be pulled from the main motion or pulled from the conversation here.

MS. BEATY: Hey Mr. Chair, this is Julia, can I speak to that point about the documents?

CHAIRMAN NOWALSKY: Please do.

MS. BEATY: I worked closely with Caitlin, in terms of writing the draft. Well, she did most of the work, but I helped edit it a little bit. We tried to make it so that it would actually work as both a Council and a Commission document for public hearings. Throughout it says the Council and Board will decide. On the cover page it has both of our logos and both of our names for the two organizations there.

We weren't actually planning to have a separate Council document for public hearings, unless the Council really wanted to. We'll have to have a separate document later down the road for the rulemaking process, but for public hearings we were hoping that what is in the briefing book, as modified today, would be the same document that is used for the Council and the Commission for public hearings.

CHAIRMAN NOWALSKY: That's helpful. I think the takeaway is that at the end of the day there is two separate documents, an Addendum and an Amendment that would ultimately become promulgated as final rules through the Service and through the Commission process, but we're talking about one public hearing document.

Let's see what we've got. Move to postpone further action on the Commission's Black Sea

Bass Addendum XXXIII and the Council's amendment public hearing document. Where we're at right now is that we're referencing that they are two separate initiatives, but it is one public hearing document. How does that work for both staff?

MS. BEATY: That works for me, this is Julia.

MS. STARKS: Yes, that's fine to me as well.

CHAIRMAN NOWALSKY: Okay.

MR. LUISI: Adam, can I jump in really quick?

CHAIRMAN NOWALSKY: Yes, please.

MR. LUISI: If we're perfecting the motion to make sure it's clear, this was a motion to substitute, so can we be sure to move to substitute to postpone, so that we know that there is a main motion still being considered?

CHAIRMAN NOWALSKY: Yes, I'm not sure on that, Mike, whether it's a motion to substitute or whether we're just postponing everything. Are we postponing the previous, and I guess we need to get clarification? Are we postponing action on the previous motion, which would then automatically bring it back before us, or are we substituting to postpone anything further, which would make the main motion go away? I think they are two separate things; I think.

MR. LUISI: You're right.

MS. KERNS: You're postponing the action until August of 2021, so it's not a substitute, you're just postponing taking up that motion that was previously made until August of 2021.

CHAIRMAN NOWALSKY: That motion would come back. If we go with the original language that was here 30 seconds ago, move to postpone further action, then the main motion would come back before both of these bodies in August of 2021, or again I'll go back to the makers of the motion to see if their preference was to substitute to postpone. What were they postponing, the previous motion or the further

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action? I think that is what we want clarification on. Would you agree, Mike?

MR. LUISI: I'll stay quiet. I think it was fine the first time.

CHAIRMAN NOWALSKY: No, you brought up a great point, absolutely. Let me turn to Ellen again. Did you want to postpone the previous motion, which would have it automatically come back to us in August, which is what the language currently reflects, or did you want to substitute for the last motion, and just start with a fresh slate on this next August?

MS. NOLAN: Okay, I wanted it to just come back. I don't think we need to start with a fresh slate. I think the document is in good shape. I'm trying to track here, but I can't see the previous motion.

CHAIRMAN NOWALSKY: That's where we're at. Let's go ahead and put that previous motion up, because as I think we've clarified, if we could get both on the screen at the same time, maybe split some pods or something here would be great, because that is where we're at. I'll wait until they get those up. All right, so let me go through and just go through my list of speakers. Nichola, do you still want to speak, yes or no?

MS. MESERVE: Yes, thank you.

CHAIRMAN NOWALSKY: Joe Cimino, you're still going to want to speak? Yes or no, Joe. I'll assume with the hands up that means he still wants to speak while he's getting unmodded as muted. Emerson, you're going to want to speak on the motion to postpone? All right, I've got a hand up there. Let me get through those three, and then let me reach out.

MR. EMERSON C. HASBROUCK: There has been a problem with unmuting here, I think, Adam, and Joe may be experiencing the same thing. It took a while to unmute here. I had to push the button about 20 times.

CHAIRMAN NOWALSKY: I'll try to give you a heads up. What I'll let people know here is to who the next speaker is, and then they can unmute themselves beforehand, and try to just mute their local device. All right, let me go to Nichola. We'll go to Nichola, Joe, and Emerson, and then I'll reset the list with both for and against for the motion to postpone. Nichola, you're up.

MS. MESERVE: I had given consideration to the interplay between the sector allocation Amendment and the sea bass commercial allocation Addendum. Regardless of the overall size of the pie. I think it is time that we consider how the pie is split. The interplay that most of the concern seems to be based on, on the trigger option itself.

But there are with it the specific poundage amounts. But there are other options here that wouldn't put us in a bind with waiting for the commercial/recreational allocation Amendment, and how that would play into it. I also think we have heard some ways where if that were the approved approach, the trigger, where it could be further modified with the commercial/recreational allocation Amendment. Lastly, the date of August 2021, I would note in the motion.

I would note the recreational/commercial allocation then is currently schedule to go to public hearing in early 2021. If there were to be some delay in the commercial reallocation amendment, I could possibly go along with having those public hearings all happening at the same time, and final action on both of these documents happening at the same time. I don't think we have to wait for a commercial/recreational allocation Amendment to conclude before taking action on this document.

CHAIRMAN NOWALSKY: Joe Cimino.

MR. CIMINO: I agree with a lot of what Justin Davis said, in that I would move to approve this document, because I think it's a great template for what we should be looking at for this very difficult decision of reallocation. I applaud the work, especially of the PDT and staff on this. But I do have major concerns with the timing.

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You know, we lived through this with bluefish. We tried to bring out a bluefish commercial reallocation Amendment, before we knew what new MRIP numbers were. We had to put a stop to that. I think we're in the same exact situation right now, and I think we could potentially come back from public hearings with not enough information to move ahead, because the public isn't willing to say, until they know more.

You know the only good news on that is these public hearings won't be as laborious as having, I think we had three in New Jersey for the bluefish reallocation, when we decided to wait and get on the other side of the new recreational numbers. It's the reason why I'm unfortunately speaking for the postponement of this.

CHAIRMAN NOWALSKY: Emerson Hasbrouck.

MR. HASBROUCK: I agree with the comments Nichola just made, and I am opposed to this motion to postpone. We don't need to slow this current Addendum/Amendment down. It's been in the works for over two years now, starting with a Working Group of the Board. We don't need to delay bringing this draft Addendum/Amendment, because there is another action for summer flounder, scup and sea bass in the works for commercial/recreational allocation. Let these two separate actions go forward independently. Whatever the outcome is of the summer flounder, scup, and sea bass reallocation Amendment. This Addendum/Amendment that we're talking about today can be incorporated when that action is finalized. We don't know what the output is going to be on that.

One of the options is status quo for sea bass, right. The only thing that this motion is going to do, this motion took away. The only thing this motion took away is going to do, is to put off making some hard decisions for another year. Let's get on with our jobs of making hard decisions for sea bass management.

CHAIRMAN NOWALSKY: All right, let me see a show of hands from people that want to speak in favor of the motion to postpone right now. If you're not in favor of the motion to postpone, please keep your hand down for a moment. Hands up only if you want to speak in favor of the motion to postpone.

All right, so the three I have right now, are going to be Mike Luisi, Tom Fote, and Tony DiLernia. If you could briefly put your hands down, and let me see a show of hands of additional people that want to speak against the motion to postpone. Okay, and I've got Justin Davis, Jay McNamee, and Eric Reid in opposition to the motion to postpone. All right, so I'll go back and forth between those two lists.

Please try to keep your comments, if they're new, only if somebody else has made your comments, just feel to reference it. But try to focus on new information that you're bringing to the table. Everybody can put their hand down right now. Out of Mike Luisi, Justin Davis, Tom Fote, Jay McNamee, Tony DiLernia, Eric Reid. That is where we're at right now, and then I'll come back for another round of speakers at that point. Mike, you're up, Mr. Chairman.

MR. LUISI: I didn't actually raise my hand. My hand was still up from before, but I'll just go ahead and add a thought to the discussion. I'm kind of in the middle here. I don't know if postponing the entirety of the action, which would be to approve the document and get it to the public needs to wait a year.

I do fall in line with some of the comments, and I agree with some of the comments regarding being informed, as to what potential changes are happening at a parallel track, and how they may result in compounding effects on a state, regarding its commercial allocation for black seas bass. I think it would be best to leave my point at that right now.

I just also wanted to offer the concept and the idea that there has been a lot of work done on this, it has gone back a few years now. There is still an opportunity to allow the public to weigh in on this. We've been talking about it for quite some time. With that information that we get from the public, before final action is taken there would be an opportunity to

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consider delaying that final action, based on some of the concerns we've heard.

I see this as it could happen in a couple different ways. We could postpone until next year, move forward now, and potentially delay later, or just continue to move forward now without considering delay. I'll leave it there, Mr. Chairman, and thanks for recognizing me. I appreciate it.

CHAIRMAN NOWALSKY: We will before final vote is taken; I will go out to the public for comment on this motion to postpone as well. Justin Davis.

DR. DAVIS: I'm in opposition to this motion. I'll start off by saying that I am sympathetic to the concern over trying to move forward with this at the same time while we're considering recreational versus commercial allocations. The two actions obviously have implications for each other.

But I feel like this action is much further along, as several folks have mentioned we've been working on this for well over two years. There has been a ton of work that's put into this. The maker of this motion said a few minutes ago the document is in good shape. You know we've got a really good document here.

I feel like we can take it out now for public comment, and what we're really going to be asking the public to do is choose between different management schemes, or different management frameworks, a trigger framework versus just a straight-up reallocation framework, versus a different framework where you're taking a certain percentage of the quota, and allocating it differently. All of these options essentially include a range, the trigger option, the Connecticut only 5 percent option. Any of these are essentially describing a range of potential changes.

I think the range that is that is being considered in any of the options in this document will allow

more than enough flexibility, when it comes time for final action. That when the other action is moved along, the recreational versus commercial action, we'll be able to adjust to the outcome there.

I reject the premise that we sort of need to put this thing on a shelf until we know what's going on with the other action, because I think you could turn around and make that same argument for the other action. We could get together next week and say, well jeez, we can't move forward with the recreational versus commercial amendment, until we know what's going to happen with allocations on sea bass commercial quota.

I'm not confident that in August 2021 we're going to be in a substantially better place, understanding what's going to happen with recreational versus commercial allocation, to allow the public to make that much more of an informed judgement on the different options that are laid out in this document.

I'll also just say that there will be other opportunities to delay action on this after public comment. We can keep pushing off taking final action on this. I wouldn't, personally endorse that. I think there is a certain urgency here. Some states are very disadvantaged by their current quota allocation.

We'll have other opportunities to get public input, even after this public comment period. I know that in our state we have an Advisory Council. I have folks in the industry that I talk to regularly, and I'll continue to get input from those folks, even after the normal public comment period, which I suspect all the other folks on this call will as well. I'm receptive to the general concept behind this. I just really don't feel like this particular motion is going to put these two bodies in a better place to move forward with what I think is important action. I just don't think it's justified.

CHAIRMAN NOWALSKY: Tom Fote, and then after Tom again I've got Jay McNamee, and Tony DiLernia and Eric Reid. Go ahead, Tom.

MR. FOTE: My problem is I support the document going out. My problem is the public hearing process. I really am concerned that we move anything as a final

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action, which this is a final action we're moving now, the public hearing can make a final action, and we're going to do this at virtual public hearings.

I'm not too confident that that basically handles all the public. I've done enough Zoom calls with different organizations and different meetings with MAFAC, with the Commission, Jersey Coast, and a whole number of other organizations, Clear Water Action, to realize it's not the same as having a sit down with a public hearing.

I've been going through a document, asking questions with the group sitting in an audience, and then basically putting things out. It's not the document that is giving me a problem. I would have supported going with this document if we had public hearings. But virtual hearings are another ballgame, and I will have the same problem with it, and I'm going to have the same problem moving the other document out for the same reason, because I just don't think it's fair.

There are a lot of people like me that still use a flip phone that don't feel comfortable getting on Zooms and things like that. I do it, because it's a necessity of life, and I, and I've learned how to appropriately do it. But I mean, I sit with calls and trying to explain takes me two days sometimes to explain to some of the people that are supposed to be on the call, how to actually get to a Zoom call, which is a lot easier than this type of call.

That was my concern. It had nothing to do with the document, just the public hearing process. That's what I've been waiting to talk about all this time. I don't want to do joint public hearings, where we cover a bunch of states at a virtual reality. I think that could be another disaster. We're not really finding out how the people in New Jersey, New York deal with speaking to their fishery and staff at the same time.

I know it is more intensive to do that and it's more work. But I think that's part of our job. I go to the public hearings. I don't get paid. That is my volunteer job, and that is what I signed up for when I went on the Commission years ago and pushed for public hearings. Public hearings, and that was part of the process. That was my problems with it.

CHAIRMAN NOWALSKY: Great, thank you, Tom. I think what is important. The last couple comments have been hitting on some new information, and other items to consider, so that is great and I appreciate that from the speakers. Next up, Jay McNamee.

DR. McNAMEE: Hopefully I'm not just about to disappoint you. I just wanted to think back to when I made the original motion. I was comfortable if things kind of paused for a little bit. My main reason for applying that was concerns over, the same concerns that Tom just voiced. You know I also am concerned about that. I think the Zoom meetings and the virtual hearings have been working okay, you know for a lot of different things that I've been involved in. But I know some folks feel differently about that.

I was okay with a modest delay in kind of bringing this stuff out, but you know a year seems like overkill to me. That is why I'm thinking back to what Nichola said earlier. You know if something got delayed and it started back up after the first of the year or something like that. I think that would be reasonable, but waiting a full year to even just let it go out for public comment is far too long. I'll be in opposition to this new motion.

CHAIRMAN NOWALSKY: Thanks, Jay, I promise I'm never disappointed, much appreciated. Tony DiLernia.

MR. DiLERNIA: First of all, we say if this goes forward, most of the options include to giving New York an increase, New York and Connecticut in most cases get an increase. You would think right away I would want to jump in on this, so yes, sure let's go forward. But I'm a Council member, and speaking as a Council member I want to make sure that the Council process is fully respected.

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I think coordinating the Council and Commission's actions. If this goes forward the Commission will be a full year ahead of the Council, and I don't think that's where we want to be. Finally, we don't know what the reallocation between the commercial/recreational process. We don't know where that is doing to turn out, as far as changes to the commercial allocation.

To be divvying up stuff that we aren't even sure how much is going to be reallocated, if anything should be reallocated, you know commercial allocation will be decreased. I think it's a bit premature. You know the Commission has been working with these state-by-state quota systems in this process for years, and it seems to have been working.

To give them another year to continue to work with the process they have in place doesn't seem to be a problem to me, and at the same time we can continue to collaboratively work on this together, and coordinate our actions together, rather than having one body jump ahead of the other. It's for that reason why I seconded the motion, and I believe we should wait until August 2021. Thank you.

CHAIRMAN NOWALSKY: Thank you, Tony for providing Council perspective, as it is a joint action that's important. Eric Reid.

MR. ERIC REID: This is a public hearing document, and I agree that it should go forward. Mr. Luisi's comment I agree with what Mike said. You know he mentioned a delay or change to the timeline for final action. That is after the public gets a hold of this document. There is nothing that says the timeline has to be maintained as it is. I agree with Dr. Davis that the range of alternatives in this document are substantial enough that the public can give us their input, and then we can digest it in however much time that may take. This notion about, well if we wait things will change, as far as public hearing format goes. Yes, okay, buy me a couple of lottery tickets today as well,

because I don't believe that. I just want to point out, in New England we have two very contentious amendments, A21 to the Scallop Plan, and A23 the Groundfish Plan.

Those are very contentious, and we are doing our best to accommodate the public. But sooner or later final action is going to have to take place regardless. I don't like it, but that's reality. I would point out that the Mid-Atlantic of course just went through their process of their Illex Amendment, of course the Illex Amendment was a totally commercial issue, there is no recreational component, and I understand that.

There are apples and oranges there, but the reality of that is, and Mr. Hughes was on this call, can probably tell you better than I. There were a series of public hearings that were attended by 60, 70, 80, 90 people, and final action was attended by the same. That was managed very well by the Council and by Mr. Hughes himself. I know it's a complex issue, but you know at the end of the day my question is to the supporters of this motion to postpone.

Do you really think that between now and next August that without public input this document is going to be so changed, so substantially changed after we hear from the public, and the response to the options that we have in this document, that they would present the possibility we would have to go back out to the public. I don't see that happening.

The suite of options is pretty broad, and we can gather a lot of input. We're not going to final action, we can adjust our final action timeline, even if we go to public hearing now. I would suggest with all that in mind that we approve this document, get public input. If we've got to adjust it then we do it. If that happens to be after August of 2021, so be it. But there is no reason to avoid the public anymore in this document. Let's send it out to them, let's get it back, let's do our job.

CHAIRMAN NOWALSKY: I'll second the kudos to Mr. Hughes for the great work he did at the Council, and everyone who does great work, staff and Chairs included. Let me ask, at this point is there anyone else from the Council and Board that would like to speak to

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offer new information in helping both bodies make a decision, either for or against the motion.

If so, raise your hand at this point. I'm not seeing any other hands, so at this point I'm going to go out to the public for comments on the motion to postpone. The first hand I see up is Greg DiDomenico. Good afternoon, Greg.

MR. GREG DiDOMENICO: Good morning, sorry good afternoon, Mr. Chairman, can you hear me pretty well?

CHAIRMAN NOWALSKY: I can hear you like you're right next to me.

MR. DiDOMENICO: All righty. I'm going to be brief.

CHAIRMAN NOWALSKY: Just for the record, he's not.

Mr. DiDOMENICO: I'll be brief. Let me support the motion to postpone for one basic reason. All along this process I was willing to go ahead, in haste and in good faith, and hopefully to help or assist those commercial folks up north, who have been disadvantaged by low quota. I was willing to go ahead and do that.

But quite frankly, given the complexion of the recreational/commercial allocation document, and specifically the most recent information that leads me to believe that catch-based management will be applied, and the other demersal species, which could very easily from the newest analysis, shift and reduce commercial fishing quota or percentages by 20 percent.

I'm no longer willing to take the risk of losing additional quota for anybody at this point. It would be good to postpone, and it would be good to understand that at some point this issue of commercial, this issue of catch-based versus landings-based approach needs to be fully vetted, and again repeat what I said earlier

this morning, the application of which should be applied differently to stakeholders.

CHAIRMAN NOWALSKY: Are there any other members of the public who would like to speak, either raise your hand, or if you don't have the ability to do so through the webinar, please just go ahead and speak up, and let me know that you want to speak. Okay, seeing no other hands. Greg, if you would be kind enough to put yours down it would be appreciated, if you don't have anything else to add.

Thank you very much. Hearing nothing else, I will bring it back to the virtual table. Does the Board and Council have anything additional they would like to add for or against this motion, before we go ahead and do the vote? All right, seeing none. If I could ask staff to go ahead and just put up the makers and the seconds of the motion to postpone. I'll go ahead and read this one more time, and just make clear what this will do.

Move to postpone further action on the Commission's Black Sea Bass Addendum XXXIII and the Council's amendment public hearing document until the August 2021 meeting to allow progress on the commercial/recreational reallocation amendment. That motion was made on behalf of both the Board and the Council by Ellen Bolan, seconded for the Board by Tom Fote, seconded for the Council by Tony DiLernia.

I'll go ahead and call the question first for the Board, and then I'll turn to Council Chair to go ahead and call the question for the Council. I'll first go ahead and give Commissioner members about three minutes or so here to go ahead and caucus, and then we'll go ahead and take the vote. Justin Davis, did you have one last thing to add before we caucus?

DR. DAVIS: Yes, thank you, Mr. Chairman. I just wanted to clarify it for the Board vote. Are we going to use the procedure we seem to have adopted today, where when the Board votes are tallied up it will be announced which states voted in which direction?

CHAIRMAN NOWALSKY: Yes, I'm comfortable with that. While it is not formally a roll call vote, I think it's

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important to recognize that the process if we were around the table, we could all see everything. If somebody is not in front of a computer, they can't see the hands, so that will be my intention. I will ask for one Commissioner from each state to go ahead and raise their hand. I will ask staff to run down that list, announce the votes that they have as the yay, nay, abstention and nulls, and then that way we have everything as a record, and I'll defer to the Council Chair if he would like to do things the same way there as well. Roy Miller.

MR. ROY W. MILLER: I would like to know procedurally what we're doing here. We're going to vote on the motion to postpone. Now if the motion to postpone passes, what happens to the previous motion? Do we then vote on that, or by approving or disapproving the motion to postpone, does that do away with the need for the previous motion? Can you clarify it for me, Mr. Chairman what the intent is?

CHAIRMAN NOWALSKY: I most certainly can, Roy. A vote in favor of the motion to postpone, if this motion to postpone passes, we will have no further business to conduct regarding the Addendum and Amendment today, and the document will sit as is, and will come back before the joint body in August of 2021. If the motion to postpone fails, then we will go back to the main motion and take it up at that point in time, with either a vote or any further additions, amendments, substitutions or other actions. Does that make clear to you what we're doing?

MR. MILLER: Thank you for that clarification.

CHAIRMAN NOWALSKY: Let's take three minutes or so here, and then we'll go ahead and take the vote. I'll ask the Board, is there any other states that need more time to caucus, either raise a hand or just chime in with more time, please. Okay, I'm not hearing anything, so I believe we're ready to vote. We will go ahead and take the question first to the Board. Let me

just quickly turn to Council Chair. Is there anything else you want to offer before we take this vote up, Mr. Chairman?

MR. LUISI: No, thank you Adam. I think we've had a good discussion. There has been a lot of back and forth about the concerns about moving forward now. I think it has been recognized that there is an intent to address the situation of abundance and access. However, given the complexities of the global pandemic, and data that may be changing as a result of the commercial allocation. I think those concerns were made clear. I don't think there is anything else we need to cover. It's been a good back and forth, and I think it's time to call the question, as you have suggested.

CHAIRMAN NOWALSKY: All right let me go to just a quick question to staff. Do we have Fish and Wildlife Service present, so we make sure we get an accurate number of votes, or are we just looking at 11 votes and not 12?

MS. KERNS: Hold on Adam. No, Fish and Wildlife is here.

CHAIRMAN NOWALSKY: Okay, so we're going to be looking for a total of 12 votes is what the number we're going to be looking for.

MS. KERNS: If everybody votes, yes.

CHAIRMAN NOWALSKY: Well everybody should vote one way or the other, yes, no, abstain or null. We'll do it as many times as we need to, to get to 12. Let's hope it's just once. All right, all those in favor of the motion to postpone, please go ahead and raise a hand. One vote for delegation, and then I'll ask staff to just run down that list after we've given everyone enough time.

MS. KERNS: Please don't take your hand down. I will take it down for you. I have New Jersey, Delaware, Maryland, Virginia and PRFC.

CHAIRMAN NOWALSKY: I thought I had summarized. New Jersey, Delaware, Virginia and Maryland, PRFC, correct?

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MS. STARKS: Yes, that is 5.

CHAIRMAN NOWALSKY: All right, those hands have been cleared. All those in opposition to the motion to postpone raise your hands please.

MS. KERNS: I have New York, Rhode Island, Connecticut, Massachusetts, sorry I had some hands move on me. North Carolina that is 5, right Caitlin?

MS. STARKS: Yes.

MS. KERNS: And Rhode Island, did I say Rhode Island, I'm sorry if I didn't.

CHAIRMAN NOWALSKY: I've got Rhode Island, Connecticut, Massachusetts, North Carolina, and New York in opposition to the motion to postpone. Okay, abstentions on the motion to postpone.

MS. KERNS: Fish and Wildlife Service and NOAA Fisheries.

MS. STARKS: That's 2.

CHAIRMAN NOWALSKY: There should be no null votes. We've got 5 votes in favor of the motion to postpone, 5 in opposition, 2 abstentions. The motion fails for a lack of majority, therefore there is no need to take this motion to the Council. That brings us back then to the main motion. Let me ask, is there anyone who want, I believe the majority of the discussion that we had on the motion to postpone addressed a lot of the issues here.

I will ask if there is anyone who wants to make any subsequent motions to the motion before us at this point. Okay, I'm not seeing any. I am going to ask, is there anyone who wants to make any final comments. Otherwise, I'll go ahead and give caucus time for a minute on this. I'll ask if there are any additional comments that people want to make now on this main motion. We've got Tony DiLernia.

MR. DiLERNIA: I voted for the motion that just failed. You heard my reasons before. I have to say that as a Chairman of the Council's Committee that is going to deal with this, I am still going to vote no regarding sending it out. I don't think we should be sending it out until we coordinate with the 2021. I am going to be voting no.

CHAIRMAN NOWALSKY: I'll just offer that from a procedure perspective to the answer of where we're at is that if this motion passes staff will begin the process of finalizing the document, making sure all i's are dotted, t's are crossed, getting it posted to Council and Commission websites, and beginning the process of scheduling public hearings.

If this motion were to fail, then I think we would be in a state of limbo. I would be looking for some direction from the Council and Board at that point as to what they want staff to do with this document, should this motion fail. We had a motion to postpone basically any further consideration for a year. There may be some interim ground, if this motion fails.

But we would take that discussion up likely not today, due to other things on the agenda. Likely what I think I would do is direct staff to basically schedule this topic for a future meeting, to take it back up again, is I think where we would be at if this motion fails. Chairman Luisi, you've got your hand up. I don't know if you wanted to comment in the motion, or just talk about where we are should this motion pass or fail.

MR. LUISI: I did have, you started to cover it there at the end. I'm wondering what happens in the event that this motion then fails, and you stated that we would leave it up to staff to bring it back before us at some later date. I would almost think that staff would probably return a question to the Board and the Council at that point, as to when they would like to see it again. I don't know that we want to put that on staff to just make that decision.

If this were to fail, we should have a discussion about when we would like to see this again. I'll hold comment. I would like to see if anybody else has any comment to offer. I may offer comment on behalf of the state of Maryland, not as Chair of the Council,

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regarding where my position was on the previous vote, and then what I might be thinking about for this vote. I'll hold that for now, see if anyone else has anything to offer. But keep in mind that we may need to provide guidance to staff, as to when we might want to see this again if this fails.

CHAIRMAN NOWALSKY: That is completely true. It wasn't my intention to suggest it would be staff's decision. I think what I was alluding to was that we would need some direction from staff when they might think we could next bring it forward as well. Yes, I agree it would ultimately be the will of the Board and the Council what we would do with this, with guidance from staff.

All right, any other new information to bring forward on the motion prior to giving the Board another moment to caucus, and then calling the vote? All right, seeing none I'll give the Board one minute here to caucus, I would think the last caucus probably covered it, but go ahead. What we'll do when we come back with the vote, Mike, since the voted first last time, we'll turn to the Council first for you to conduct that vote if you're ready for that when we come back from caucus.

MR. LUISI: I can do that, thanks.

MS. KERNS: Mike, I don't know what happens here, but Scott Lennox sent us a note and told us that he had to leave the meeting, but if he can he would like to vote in favor of this motion. I give that information to you.

MR. LUISI: Okay, and I think procedurally this is all new territory. Not that it's new territory, but procedurally the way we've done things at the Council is that if you are not present during the casting of a vote, then that vote will not be counted. If his intent was to try to vote but not on the call, then I'm not going to include that vote. But his comment regarding what he would have done will be taken in the record.

CHAIRMAN NOWALSKY: Is there any delegations that need additional time to caucus for the Board? Okay, we'll take another moment. All right, let's go ahead and bring the vote back to the table. Chairman Luisi, I'll turn to you to go ahead and conduct the vote for the Council first, since the last vote was done at the Board level first.

CHAIRMAN MICHAEL LUISI: Thank you, Chairman Nowalsky. I'm going to go ahead and read the motion to the Council, and I'll be asking for the Council's vote. Unlike you, Adam, I do not see the attendees and hands, so what I'm going to do is ask staff to just count the hands in support and in opposition, and present those counts.

I can't tell you who is voting for and against at this point. That said, the motion is to approve Draft Addendum XXXIII and Council public hearing document, as presented today, for public comment. All those members of the Council who support this action, please raise your hand.

MS. KERNS: Mike, I'm just waiting until everyone raises their hand, because it moves the names all around.

CHAIRMAN LUISI: Understood, take your time.

MS. KERNS: You have Joe Cimino, Maureen Davidson, John Clark, Sara Winslow, Chris Coon, Mike Pentony, Chris Batsavage, Laurie Nolan, and Warren Elliott. If somebody else had their hand raised and I didn't call their name, please speak up.

CHAIRMAN LUISI: Okay Toni, I counted 9 as you read that out. I'll just confirm with you.

MS. KERNS: Yes, I count 9 as well.

CHAIRMAN LUISI: If you can clear the hands for me. Everyone's hands should be down at this point. I am going to now.

CHAIRMAN NOWALSKY: Sorry to interrupt. Toni, did you get my note about my voting relative to.

MS. KERNS: Yes.

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CHAIRMAN LUISI: Okay, so I'll go ahead and call for all those opposed to the motion, please raise your hand.

MS. KERNS: You have Peter Hughes, Sonny Gwin, Wes Townsend, Ellen Bolen, Steve Heins, Tony DiLernia, Dewey Hemilright, and Adam Nowalsky.

CHAIRMAN LUISI: I counted 8.

MS. KERNS: As did I.

CHAIRMAN LUISI: Let me ask if there are any abstentions.

MS. KERNS: I just cleared the deck, so abstentions if you raise your hand now. I do not see any hands.

CHAIRMAN LUISI: That count makes sense, there were a couple Council members, given that Scott had to leave and Peter deFur was also not available today. That count makes sense, as far as the number goes. With a 9 to 8 vote on this motion, the motion is approved by the Council, and Adam I'll turn it back to you for a Board vote.

CHAIRMAN NOWALSKY: All right very good, thank you very much. For the Board. All those that are in favor of the motion, please go ahead and cast your vote by raising your hand. One vote per delegation, please.

MS. KERNS: Okay, we have Rhode Island, Delaware, Connecticut, Massachusetts, NOAA Fisheries, North Carolina, and New York. I'm going to clear the deck.

MR. LUISI: Toni. I'm sorry, Toni, I lost my screen. Something happened and I don't see my hand raise function anymore.

MS. KERNS: That's because when you said you couldn't see people, I made you the organizer. Do you want to vote in favor?

MR. LUISI: I do not.

MS. KERNS: Okay, no worries. Let me know what Maryland's vote will be. That is 7 in favor, Caitlin, right?

MS. STARKS: Yes.

CHAIRMAN NOWALSKY: Those hands have now been put down. Can I get all the votes that are no votes, in opposition to the motion to go ahead and raise a hand, one vote per delegation, please?

MS. KERNS: Mike, is Maryland a no?

MR. LUISI: That is correct.

MS. KERNS: We'll have Maryland, New Jersey, Virginia, and PRFC, so 4.

CHAIRMAN NOWALSKY: Thank you very much, abstentions.

MS. KERNS: Fish and Wildlife Service.

CHAIRMAN NOWALSKY: Great that will make 12, and we'll have no null votes. The motion passes the Board, 7 votes in favor, 4 opposed, 1 abstention, and no null votes. Okay, so I think where that brings us now is back to the topic of public hearings. We have passed the motion to go ahead and approve this document. We had the timeline up earlier with next steps.

There was a proposal. I think maybe if staff could bring up the slide related to public hearings. There was a discussion item there that maybe public hearings move from a state by state type of public hearing venue to something more comprehensive, or less geographic based. I mean I'll just add that from my own experience of public hearings, for various topics and different entities, what I've definitely seen occur first hand is there are no more travel restrictions.

We certainly had people that traveled out of state, sometimes great distances, to attend public hearings that were not in their same state. But certainly, the

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virtual aspect of things has taken that away. We saw a lot of the same people at places, we saw people from out of state taking places.

I do think there is some merit to consideration about what we do here moving forward, and whether those hearings adequately reflect an individual state interest, and/or whether or not that really matters. I'm not here to make that decision. But again, I think if we could get the slide up that has the information about the public hearings, and I would turn to staff to state what the specific needs are that they have, that they need direction from to move forward to begin scheduling these.

MS. KERNS: Adam, I think I am going to try to help Caitlin out here. One of the things that we had talked about, relayed earlier in the week with striped bass and some other things were other species that have passed addendums, is that the Executive Committee next week would talk about public hearings and the best way to move forward with public hearings.

I thought maybe we could get the advice from those folks, and then still reach out to the states and talk to you all about determining whether or not we can find some ways to do some consolidation of hearings as well. I'm not saying that no, we won't give your state a hearing or anything like that, if that is what you really need. But if that is okay with you then we would just wait to hear the Executive Committee's advice, and then reach back out to the Board, in asking about hearings.

CHAIRMAN NOWALSKY: The one question I have with that Toni is, traditionally outside of a closed topic, such as personnel issues. The Commission's Executive Committee meetings are a public process, with materials available, agendas as well as the opportunity for public to attend. I understand that the needs for the Executive Committee to meet on topics has increased. I understand there is regular and/or a standing meeting now posted. But if we go that route, what opportunity does that then

provide this Board or any other member of the public to weigh in on that decision-making process?

MS. KERNS: Definitely the Board can come listen to the Executive Committee. Obviously, it's up to the Chairman to determine, you know to recognize other speakers, depending on how much time there is. But as I said before, what we thought we would do is get the advice of the Executive Committee, but again I don't think that it precludes a state from being able to ask for a hearing. I think that we're just trying to reduce fatigue of folks on the hearings, and that's why we're trying to do some consolidation.

Especially because they are all webinars, and we recognize that sometimes some states have some individual needs. I think that it's highly likely following the positive feedback that the Council found with recording the hearings that we might do something like that as well. Again, we would want to run that past the Executive Committee. There are just a couple of different ideas that have been put out there, in talking about webinar hearings. Again, an individual state still has always had the ability to ask for a specific hearing.

CHAIRMAN NOWALSKY: What I'm hearing then is your proposed way forward is to get some input from the Executive Committee, which would be meeting next Thursday, despite there being a Council meeting still at that time?

MS. KERNS: I think it depends. Bob just sent me a note, and I forgot that the Council meeting may still be going on. Either next week or the week after.

CHAIRMAN NOWALSKY: Sometimes within the next two weeks you would get some feedback from the Commission's Executive Committee on what they recommend, and that would be a recommendation from the Commission side. Given that this is a joint public hearing document, do we have any direction from Council staff that they want to weigh in about moving forward with these hearings?

MS. BEATY: This is Julia. Not necessarily. Honestly, I was looking at something else when you asked that question. But I think I understand the gist of the

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question. We were comfortable moving forward with virtual hearings at this point, but like has been discussed planning to keep this a joint process, and do everything together.

CHAIRMAN NOWALSKY: What I'm hearing right now is the plan would be for the Commission's Executive Committee to have discussion, some thoughts about how best to move forward with virtual hearings. That information would then come back to this Board, and I think to the Council, and then at that point staff would propose times for hearings.

I mean typically the states have to work with Council staff to schedule them. I'm not sure, is that still what, or we just don't know what it's going to look like, and basically what you're telling us is just hang on, we'll give you some information in the next two weeks.

MS. STARKS: I don't know if Toni wants to weigh in, Adam. But it sounded to me like once we have some feedback from Executive Committee, we can still work with the states to figure out a schedule that works for everybody. We wouldn't necessarily come up with the schedule, but we would still be reaching back out to the states.

MS. KERNS: Correct.

CHAIRMAN NOWALSKY: All right, well let me turn to the Board and the Council then for any other comments from them at this point. Tom Fote.

MR. FOTE: Yes, two comments. One, I'm suggesting that we have our own hearing in New Jersey. I don't see the inconvenience of having multiple hearings, since there is no travel involved. All you need to do is sit behind a screen someplace. It's not where you're spending days on the road. I mean all you have to do is spend two hours, so it is a lot easier to do virtual hearings than it is to do person to person hearings.

Second of all, I would like to make sure I get notified when the Executive Committee is now meeting, since there are a couple of issues that I'm involved in that I would like to hear, and I have not been getting those notices, so please send me those notices as a Board member. I'll leave it at that. But I still have concerns about how we do public hearings on final actions, without having the public being able at the hearings.

CHAIRMAN NOWALSKY: Next up I've got Joe Cimino.

MR. CIMINO: Just as a Council member now, go back to the Regional Administrator's questions. You know we're going forward with, as I pointed out I think is a really well written document, but without any preferred alternatives. Is there a possibility at some point to consider that? Even if it's after a first round of public hearings.

CHAIRMAN NOWALSKY: Dr. Moore, good afternoon.

DR. CHRISTOPHER M. MOORE: Good afternoon everyone. I would disagree with Mike's earlier comments. We've actually, it's a little fuzzy, but we've gone out to public hearings with documents that don't have preferred alternatives. It's really up to the Council and the Board to decide if in fact you want to wait to pick a preferred alternative. But we don't have to.

CHAIRMAN NOWALSKY: Well, so let me offer this up then, is that we've had quite a bit of discussion earlier on about when we would send this out. We've now approved the document for public hearing. Is there any possibility that the Council, in working with the Board before public hearings occur, could take another bite at this with regards to selecting preferred alternatives, or would we say we're too late for that at this point?

MS. KERNS: Adam, I don't know if that is a question for the Board and Council members, but I will tell you typically the Commission does not put out preferred alternatives.

CHAIRMAN NOWALSKY: Well I think it's a question for staff to weigh in as to whether that might be a compromised position way forward, if they think it's

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reasonable. If it's unreasonable after we've voted to take it to take it out for public comment, to then go back and delay those hearings until after a preferred alternative has been chosen by the Council, well then that is off the table entirely. Dr. Moore, did you have any input on this?

DR. MOORE: I would say it was unreasonable.

MR. LUISI: I lost my ability to raise my hand, so I'm just going to have to yell out when I want to speak. There are other ways about this too. We could go out to the public, get their feedback, and we could convene, you know our Summer Flounder, Scup, Black Sea Bass Committee, with representatives from the Board at some point this winter.

If we decided that would be an appropriate way to go forward, to perhaps make a recommendation on preferred alternatives based on feedback from the public. There are a couple different ways of you know moving forward with this, rather than just hearing from the public and taking up final action in December. Just something to be thinking about what our next steps are.

CHAIRMAN NOWALSKY: Yes, and I think what occurred here today is that we did not take up the issue of preferred alternatives prior to going ahead and voting to take the document out for public comment. I think that's where the opportunity was for the Council to jump in. Chris Moore, did you want to add something?

DR. MOORE: Yes, I just want to make sure that we're all on the same page. We're talking about adding a preferred alternative before we go out to the public, correct? If we decided to do that, that would obviously delay the public hearings. My recommendation at this point would be to move forward with the process.

Hold the public hearings in late summer or early fall, as identified in the timeline, and see where that puts up after that. But again, there is

nothing that suggests we have to pick a preferred alternative before we go out to public hearings. It sounds like, from a Board perspective that is the way that you typically do it anyway.

CHAIRMAN NOWALSKY: Mike Pentony, I've seen your hand up. It's now down. I'll just give you an opportunity, in case you wanted to weigh in on anything else on your perspective of ultimately final action that the Service would take if we go out to public hearings without a preferred alternative on the Council side.

MR. PENTONY: Yes, I was just going to correct the record. I didn't say that the Council has to select preferred alternatives. Clearly the Council often goes out to public hearings without them. But I believe the Council generally at least has a discussion about whether to go out to public hearings with preferred alternatives. In this case, I was simply drawing attention to the fact that the Council hadn't had any discussion around preferred alternatives before voting to take a document out for public hearing, and acknowledging that the Commission process is different, and they rarely do.

CHAIRMAN NOWALSKY: Is there anyone from the Council who wants to offer anything else at this point regarding the fact that the document was approved for public comment, there was no preferred alternatives chosen then at this point? All right, well seeing no other hands, and hearing nothing else. I think then where we're at is the document was approved for public comment. There were no preferred alternatives chosen.

There is going to be some work done by staff, who will get information back out about some thoughts about how hearings would be conducted. States have the ability to request specific hearings, and unless anyone has anything else or staff has anything else to add, I believe that's where we're at with this agenda item. All right, seeing no other hands or hearing anything else, does staff need anything else on this agenda item, or have we concluded our business for it?

MS. STARKS: I'm all set.

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CHAIRMAN NOWALSKY: All right very good, we'll thank both bodies. We are behind schedule. It is my intention to wrap up by 4:00 p.m. today, to give everyone a chance to attend to whatever other matters they have. We have another item to come before both the Board and the Council, with Recreational Reform Initiative.

The additional item on the agenda will be a Board only decision, so I'll defer to the Chairman after we get through Recreational Reform Initiative what charge he wants to give the Council after we get through Recreational Reform. We're going to take a seven-minute break, we will come back at 3:10.

We will take up the Recreational Reform Initiative, where there will be consideration of initiating a management action. It would be my intention to wrap that up within a 30-minute timeline or so, in order to give the Board time to consider the Massachusetts proposal for their black sea bass season. We will reconvene at 3:10, and go ahead and take up the Recreational Reform Initiative.

(Whereupon a recess was taken)

CHAIRMAN NOWALSKY: We'll go ahead and reconvene our meeting this afternoon. Our next agenda item is an Update on Recreational Reform Initiative. This has been to date primarily a Summer Flounder, Scup and Black Sea Bass Board issue, in conjunction with the Council. I will bring to the attention of any Summer Flounder, Scup, and Black Sea Bass Board members who were not also Bluefish Board members, and did not attend the Bluefish Board this morning.

That the Bluefish Board with the Council, did vote to remove for-hire sector separation from their Allocation Amendment, and recommended it be added to Recreational Reform. I've had an opportunity over some of the breaks to speak briefly with Chairman Luisi, as well as staff about that.

Since we are not convened with the Board formally this afternoon, I did invite Bluefish Board members to joint with us this afternoon, so they can get up to speed with what is going on, as well as participate in the discussion. Then we'll offer some more guidance later on about how to best integrate that. Our action item for today would be to consider initiation of a framework and addendum or amendment, to address any management options considered through this initiative. Staff will have some updates for us in the presentation about what management document they think is most appropriate to achieve what end, and with that I will turn to Julia Beaty from Council staff. Thank you.

UPDATE ON RECREATIONAL REFORM INITIATIVE

MS. BEATY: Good afternoon everybody. Like Adam just said, this is a joint initiative of the Council and the Commission and we have been thinking about it as if it does also consider implications for bluefish. Although we haven't had many formal interactions to Bluefish Board so far.

But, everything under consideration so far has been considered in terms of how it might apply for all four species, and none of the changes are specific to any particular species, and everything could apply to any of the four, but the details might vary, based on stock status considerations, which of course vary across the four species.

The Chair just described the objective of this discussion, so I'm going to skip over that. I just wanted to like really briefly remind you all of what has happened so far in this initiative. We call it an initiative, because it's not a management action yet, it's not a framework or an addendum or an amendment.

A Steering Committee was formed in March of 2019, and they have been working on this since then. They developed a draft outline for the initiative with their recommendation for the goal and vision and objectives for how to meet that goal and vision, and I'm just going to really quickly touch on what is in there, just to remind you of the potential topics that might be included in this initiative.

These minutes are draft and subject to approval by the Summer Flounder, Scup and Black Sea Bass Management Board. The Board will review the minutes during its next meeting.

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But there are more details in the briefing materials, if you want to read more about that. We had the Monitoring Committees talk about that outline, and they were generally supportive of continued development of everything in that outline. Then as the Chair touched on, of course there are topics that have been discussed through other actions, so specifically through the amendments for bluefish, and the summer flounder, scup, black sea bass commercial/ recreational allocation amendment.

There has been a few topics that have been discussed through those actions, but taken out of those actions, and there has been some discussion of, did they belong in recreational reform, or did they belong somewhere else. It would be helpful to quickly revisit all of these topics, and then have the Council and Board weigh in on, do you actually want to move forward with a management action for any of this, and if so, what are the specific topics that you want included?

This slide shows the goal and vision statement that the Steering Committee came up with for the Recreational Reform Initiative, and there are three parts to it. The first is stability in recreational management measures, the second is flexibility in the management process, and the third is accessibility aligned with availability and stock status. The Steering Committee wanted to make it clear that the intent of this Goal and Vision Statement is not to circumvent our requirements to constrain catch to ACLs, and it's not intending to change our current system of how we come up with catch and landings limits, but rather how can we work within our current requirements under the FMP and the Magnuson Act, to achieve more stability, flexibility, and accessibility in the recreational fisheries. There are five objectives in the Steering Committee outline for how to address that Goal and Vision Statement, and I'm just going to really briefly touch on each of them, just to remind you what they are.

The first is the most complex one, I guess in terms of having the most number of sub bullets underneath it, but it's to think about how to better incorporate uncertainty in the MRIP data into the management process, and there are three specific suggestions for how you could go about doing that.

The first is to adopt a standardized process for identifying and smoothing outlier MRIP estimates. This would be applied to both high and low outlier estimates, it could be applied across the entire time series of data, and could be used across multiple species. The second is to use what we're calling an "envelope of uncertainty" approach.

What this means is every year when we're thinking about next year's recreational management measures, we come up with projections of what we think harvest is going to be next year. There is uncertainty in those projections, so the projection is not just a point estimate, but it also has a range of uncertainty around it.

This approach would be you would predetermine, based on statistical considerations what the appropriate range of uncertainty around that estimate, like how is that going to be calculated. Then if next year's RHL falls within that range of uncertainty, then you wouldn't make any changes to management measures.

Then the third suggestion is to further evaluate the pros and cons of using preliminary current year MRIP data in the process, which is something that we are currently doing a little bit differently for summer flounder, scup, black sea bass and for bluefish. It would just be to think more about what is the most appropriate way to use that data.

The second objective in the Steering Committee outline is to develop a process for considering recreational harvest, as well as multiple stock status metrics, when determining if recreational management measures should remain unchanged from one year to the next. This is something that we're already kind of doing, but the intent behind this is to agree to a standardized, transparent process that we're going to use each year.

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Instead of having these considerations be on a case by case basis, we have this predetermined process. The Steering Committee has talked about it like it's almost a check list of indicators, like you're seeing good trends in biomass, fishing mortality, and recruitment. If you can check all the boxes for those and say, those all look good, maybe that gives you a stronger argument for leaving your measures unchanged, when you might otherwise require some small tweaks to them.

The third objective is to develop a process for setting recreational management measures that apply for two years at a time, and the idea would be that you would predetermine these management measures at both the state and federal level, and everybody involved would agree that these are the management measures that are going to stay in place for two years, and there has to be a strong commitment to leaving them along for two years. If you get data in the interim year, to suggest that you might otherwise be allowed to have a liberalization, or you might otherwise be required to take a restriction. You're not reacting to that data.

The Steering Committee and the Monitoring Committee agree that this works best if there is that really strong commitment to making no changes. That would mean that conservation equivalency proposals from states would also be discouraged in that interim year, and you would be waiting for that third year to make any changes.

The exception is that if you get information in the interim year to suggest that the stock is experiencing overfishing or is overfished, then you would react to that. But otherwise, you have a very strong commitment to leaving measures alone for two years at a time, and then waiting for that third year to reevaluate.

The fourth objective is to think about when you do need to make changes to management measures from one year to the next. How do you go about making those changes, and are

there improvements to the process that could be made? This is something that hasn't been discussed in great detail by the Steering Committee.

They have focused more on situations when you can make the argument that you can leave things unchanged, and have that stability aspect of it. This idea that maybe we could think about, when we do make changes how do we go about that? That is something that could be part of recreational reform, if you think that is important to include.

The last objective in the Steering Committee outline is to consider the timing of when we make the federal waters management measure recommendation for the following year. For summer flounder, scup, black sea bass for example, every December you're making recommendations for the next year's federal waters management measures.

That doesn't leave a lot of time for the rulemaking process and for states to react to that. The Steering Committee wants everybody to think a little harder about what are the pros and cons of making that decision in December versus earlier in the year. You would have different data available to you, but maybe it would be outweighed by the benefits of having more advanced notice of what those changes are.

That is something that the Steering Committee just wants to think through a little bit more. Like I said, the Monitoring Committee reviewed that Steering Committee outline, and they were generally supportive of continued development of everything in the outline. But they also had a suggestion for an additional kind of alternative, I guess.

The idea would be that you would consider more explicitly tying changes in management measures to the stock assessment. Of course, management measures are already derived from the stock assessment to a large extent, but the idea behind this is that right now we react to the stock assessment information, and we also react to the MRIP harvest information. In some years, we don't have updated stock assessment information, and we only have harvest information that has changed. Of course, there is concerns about variability in the harvest

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estimates, and uncertainty in that data. The idea behind this is could you maybe consider not reacting just to that harvest data, and especially if moving forward in the future, if we're going to be getting stock assessment updates every other year.

Could we wait to make our management measure changes until we have that updated information? Just sync up the timing with when we get stock assessment updates, which again moving forward we're anticipating will be every other year, so we wouldn't necessarily be waiting a very long time to make changes.

This is definitely very closely related to that objective for setting measures for two years at a time, but the Monitoring Committee felt this would be worth considering as a standalone change as well. Then of course we have all these other items that were talked about through other amendments, removed from them, potentially added to recreational reform, but no official decision has been made on that yet.

There are three items that came out of the summer flounder, scup, and black sea bass commercial/recreational allocation amendment, after the June joint meeting discussion of that action. I'll remind you what those are, and then just this morning the Bluefish Board removed sector separation from that and talked about addressing it more comprehensively for multiple species through this action.

One topic that came out of the summer flounder, scup, black sea bass allocation amendment is what is called a harvest control rule, and this was put forward by six recreational organizations through the scoping process for that amendment. It was put forward as an allocation proposal, so allocation between the commercial and recreational fisheries.

It seems clear that that aspect of the proposal, where it deals with allocations. The specifics with how that was proposed, it seems clear that that is not feasible under the Magnuson Act requirements related to constraining catch to an annual catch limit, for example. But there are other aspects of the proposal that might warrant further development.

Specifically, the proposal has a suggestion for recreational management measures that might be worth further evaluating, as kind of a standalone option separating it from the allocation aspects of the proposal. The way it was put forward in this proposal through scoping, is that there is a range of management measures for the recreational fishery that are predefined.

They are described as steps, and this figure on the screen here came from that proposal. Step A is your set of management measures that you use in federal waters and state waters, and under the proposal it says that states could have different measures, and they couldn't be different from federal water measures.

But you would have the group of all those measures would be predefined under Step A, and Step A would be the highest level of access for the recreational fishery, and that would be used when biomass is very high. Then as biomass declines, and you kind of move down this ladder, and you have more restrictive management measures. But the idea is that all these steps are predefined. Then the proposal also suggests that the steps, especially the upper and lower bounds are defined based on a lot of stakeholder input. It suggests that the upper bounds of Step A could be the most liberal set of measures that are preferred by anglers when biomass is high.

This is just kind of a conceptual concept at this point in time. We haven't really tried to figure out what those management measures might be. But the idea that was put forward was that there is a certain level of management measures that anything that is more liberal than that wouldn't be a benefit to anglers, because maybe they only need a bag limit of so many fish, for example, or a minimum size of whatever length.

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Anything more liberal than that wouldn't really be seen as a benefit. That is the concept behind what would be Step A, and then the most restrictive step would be the most restrictive set of management measures that could be tolerated, without major losses of recreational businesses, such as for-hire vessels and bait and tackle shops.

Again, these are things that we haven't evaluated, we haven't tried to figure out if it's really possible to define those in a way that they could be realistic upper and lower bounds, based on other conditions or other factors such as biological information. Then obviously, the in between steps would be, you have a variety of interim steps in between the upper and lower bounds.

The Recreational Reform Steering Committee talked about this, and agreed that that concept of having these predefined management measures that would be used at different levels of biomass, that that is a concept that is worth further developing, but a lot of further analysis is needed. Like I said, it's conceptual at this stage.

We don't know if it's even really possible to come up with the highest desired level of access. For example, is there even enough fish to go around to make that possible? These are things that are worth exploring, and also the Steering Committee has talked about, you know we're still going to have RHLs and annual catch limits, and we still need to constrain catch to catch limits.

All of those steps have to be associated with a certain level of harvest. It can be difficult to predict harvest in the future. Obviously, we have difficulty right now, when we're trying to predict next year's harvest just based on the next year, and the idea behind this is that these would be measures that, you know you could have predetermined for multiple years.

There are a lot of factors that influence harvest, besides just the regulations, availability, weather, what's happening in other fisheries. That would be something to evaluate. Can we really come up with these predetermined management measures, and say that they have strong predictive capabilities for years into the future?

Kind of related to that the Steering Committee thought it would be really important to say that you have these predetermined management measures, but they're just going to be a starting point for consideration, and they would have to be regularly reevaluated, because conditions change. If you think this step of management measures is going to have whatever expected harvest, that expectation might change as you get new information. That will be especially important to communicate it that way, in terms of the upper and lower bound. You might want to say this is (broke up) consider, but you couldn't commit to not being more restrictive than that, if you get new information. But in general, the Steering Committee thought this was a concept that would be worth exploring further, and doing the analysis to see how well it would actually work.

Another topic that was removed from the summer flounder, scup and black sea bass commercial/recreational allocation amendment is recreational accountability. This is something that was suggested through scoping, and specific suggestions that came up through scoping for the amendment included having the recreational fishery pay back their overages more frequently than they do currently, and to bring back the ability to close the recreational fishery in-season, due to an overage.

This would represent a reversal of changes made through Amendment 19, which was the Omnibus Recreational Accountability Measures Amendment. It seems clear that all the reasons for making those changes through Amendment 19 are still valid, so it would be helpful to really talk about what is the intent behind these suggestions? Do you really want to consider these specific changes, or are there other changes related to recreational accountability that you want to consider?

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Then also past discussions of this have kind of blurred the distinction between accountability and catch accounting, which is on the next slide. Again, it would just be helpful to know, if you want to move forward with considering changes to accountability measures, what specifically do you want to consider, and what is the intent behind it? The next topic that was removed from the summer flounder, scup, black sea bass commercial/recreational allocation amendment relates to recreational catch accounting.

This is also something that we received a lot of comments on through scoping, and suggestions included things like requiring private anglers to report their catch, managing recreational harvest with a tag system, requiring tournaments to report, and changes to the VTR requirements, such as requiring additional vessels to submit VTRs, bringing back did-not-fish reports, and other changes.

There has been some discussion of, you know are any of these worth pursuing? Are they worth pursuing for just these species, or is this something that should be considered more broadly for all recreational species, or for more recreational species, similar to the discussions that you had this morning about recreational sector separation?

Then also there has been some discussion of, there have been initiatives related to trying to improve catch accounting in the recreational fishery, things like private angler reporting, for example. There have been some initiatives in other regions for specific fisheries. Maybe it would be worth trying to think more about the lessons learned from those other initiatives, before we really jump in to moving forward with a management action related to this for these species.

Also, of course we have our blueline tilefish private angler reporting that is just starting very soon. You know maybe it will be worth seeing how that plays out, and then moving on from there. Then of course lastly, sector separation

was something that was removed from the bluefish amendment this morning. It is technically still in the summer flounder, scup, black sea bass commercial/recreational allocation amendment. That amendment is not going to be discussed until next week. There was a desire expressed this morning to consider how recreational sector separation would work for multiple species in a more comprehensive way, rather than just considering it separately for bluefish through that amendment, and federally for summer flounder, scup, black sea bass through that allocation amendment.

I'm hoping that everybody knows what I'm talking about, because I guess I didn't think that there would be some Board members who were not present for the Bluefish Board meeting this morning, but I'm happy to go into more detail if anyone is not familiar with what I'm talking about here. But I think most of you are aware of the issues for that.

At the June joint meeting, when we last talked about recreational management reform, staff was tasked with providing more input on, for all those changes that are under consideration, which could be made through a framework and addendum, and which would require an FMP amendment.

There is some information on this in the briefing materials, and it seems pretty clear that basically everything that is in the Steering Committee outline could be done through a framework and addendum. Changes to accountability measures could also be done that way, the harvest control rule proposals, the aspect of that that dealt only with those predefined management measure steps, that could be done through a framework and addendum.

Any changes to the data that is reported through VTRs, without changing who is required to submit VTRs, could be done through a framework and addendum. In terms of things that would require an amendment, anything that would change who submits data on their recreational catch and harvest, that would probably require an amendment.

If we were to require private anglers to report, if we were to require tournaments to report, if we were to

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require state-only vessels to submit VTRs, those would be big enough changes that they would require an amendment. Moving towards a tag system for managing recreational harvest would be an amendment.

We hadn't necessarily thought really hard about sector separation, but it seems likely that that might need an amendment as well. Basically, anything that represents a significant departure from what was previously contemplated, or would be otherwise a big change in the FMP, that would require an amendment.

Any decision about framework and addendum versus amendment, it depends on the specifics of what is actually proposed. This is just a general idea of what we think could be done in one type of action versus another. But the actual guidance would depend on the specifics. This is a timeline that staff put together that assumes that a framework and addendum is used.

It also considers other ongoing management actions for all of these species. If you wanted to initiate a framework and addendum today, we could move forward with further developing some of these alternatives throughout the fall. You would probably also want to continue that into early 2021. We could form an FMAT or a PDT or some other type of group to help staff develop these alternatives. We think it would be important to bring in the Monitoring and Technical Committee, for specific aspects of it. They've already had a lot of discussions about how does that deal with uncertainty in the MRIP data, which is a big part of that Steering Committee outline.

They have some really good ideas for how to move forward with that. I think it would be really important to bring them in for that part of this action, if that is something that you want to prioritize through this action. If that could happen, then early next year the Council and Board could consider discussing a preliminary range of alternatives for this action, and then if

necessary we could further develop it from there, and then you could approve a final range of alternatives in a draft document for public hearings in the spring of next year.

Then if it's a framework and addendum, it's kind of optional if you do public hearings or not, but those could also occur in the spring if desired. Then you could take final action in the summer of next year, and then the rest of next year will be used for federal rulemaking, with that probably extending into 2022.

Again, this assumes it is a framework and addendum, and if it's an amendment this timeline would take longer. That is all I had, and again the objective of the discussion is to talk about, do the Council and Board actually want to initiate the management action to pursue any of these topics? If so, what topics do you want to include. The topics that you include will determine if it's a framework and addendum or if it's an amendment. That is all I had. I'm happy to take any questions.

CHAIRMAN NOWALSKY: Thank you very much, Julia, I appreciate it very much. Also, thank you very much for getting this presentation updated to reflect the actions from this morning in it already. That was fantastic. Before we turn to the full body for discussion, I think given what transpired this morning, and the question of how that best kicked in.

One of the questions that came up when I briefly spoke with Chairman Luisi and staff, was the feasibility of taking recreational reform back up next week. All of our initial reaction was that because recreational reform does not exist on next week's Council agenda specifically, that that wouldn't be a topic that would allow for any actionable items to transpire next week on.

Does anyone from the Council staff able to weigh in on that aspect, because I didn't get the opportunity to talk to any Council staff members since this morning. But given what transpired, and the possibility of similar action for summer flounder, scup, and black sea bass amendment. That is my initial thought is that we couldn't take recreational reform up anywhere on

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the agenda next week. Is there any advice to the contrary on that?

MS. BEATY: No, none from me.

CHAIRMAN NOWALSKY: Dr. Moore.

DR. MOORE: Yes, you're right, Adam, we couldn't.

CHAIRMAN NOWALSKY: Okay, so that would leave us then with either doing something today, and what the discussion was, if a motion did come forward today it would have to be a motion that left room for the record to reflect what the intention was. We're meeting as the Summer Flounder, Scup, and Black Sea Bass Board.

Again, I've invited members of the Bluefish Board to listen in and participate if they desire. But we really can't make any decisions for that species ourselves. It was our thought process that if there was any specific action that came forward, it would be done in a way that the record would reflect that staff and leadership would work to provide those bodies with a direction forward in the not too distant future, to make sure we could include all of the bodies that need to be included.

But it's clear that that is not going to be next week, per se. That brings us then to the point of discussion about initiation of a document today. There were, I think Julia, probably best if you bring up the screen that has the two columns of framework addendum options and amendment options, about if we want to initiate one of these documents.

I'm not sure if we initiate one or the other. Another thing I think it would be helpful for staff to weigh in on, is the ability to elevate one management document. For example, if we initiate a framework or addendum today to get this rolling, what is the feasibility of elevating that to an amendment, to accommodate sector separation potentially, or something else, or potentially downsizing.

If we initiated an amendment, could we go the framework/addendum route? I'm thinking, if I recall correctly, and again I'll look to staff, is that we would have the ability if a framework/addendum developed into something that required amendment. I believe we could go that route. But I'll turn to staff, and I would also ask staff to provide some input to the Board and Council about what initiating a management document gives us, with regards to access to staff time, both at the staff and the Board, and potentially the Service.

As we've gone through the Steering Committee work, the Service has been a very willing partner. They have expressed many times that having a management document initiated would likely facilitate access to more resources. Again, I would ask staff to just provide input to the Board about being able to move from one document to the other, and what initiating a document today would mean to us, with regards to getting resources onboard.

MS. BEATY: I'll take a first crack at responding to that, and then other staff can jump in if they have other things to add. In terms of starting with one type of management action, and then either upgrading or downgrading later. I think you could do that depending on what goes in there. I don't think it would necessarily be appropriate to initiate a framework and addendum right now, with something like private angler reporting in it, because we have guidance that that requires an amendment.

It wouldn't necessarily be appropriate to start that as a framework, if we already know that it probably requires an amendment. But if you wanted to start an amendment and downgrade later that is possible. Another idea that staff have really just briefly thrown around, just today is that if you wanted to pursue a combination of things, some of which need an amendment, and some of which require a framework and addendum. Maybe you could do two separate actions. If you really wanted to pursue sector separation, for example, and we really think that's an amendment, but you also want to consider some of those things that are in the Steering Committee outline. I think some of those other things are more

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low-hanging fruit, then an amendment would probably be overkill for them.

You might want to consider doing two different actions to address, some things through a framework addendum, and some things through an amendment. In terms of initiating an action and staff time, I do think that would be helpful, because it would make it very clear that this is a priority for the Council and Board, if there is an action initiated, whether or not it is a framework or an amendment.

Because this is something that has been talked about for about a year and a half now, almost. It would be helpful to know that this is a high enough priority for both groups that you want to see a management action, and I think that would make it easier to dedicate staff time, and ask the Monitoring Committee, for example to do things, and move forward with forming FMAT or PDT, so I think it would be helpful from that prioritization aspect.

CHAIRMAN NOWALSKY: I sure hope Toni Kerns was sitting down when you talked about two more documents for staff to handle there. All right, so in terms of trying to guide the discussion here, and where we are timewise. I am not really sure the merits of trying to debate each of these individual topics here today are necessarily the most efficient use of our time.

I think I would like to try to steer comments and direction of the Board and the Council at this point, into whether we want to initiate a management document. Some brief discussion so that we have something on the record about what that would entail, knowing that staff and leadership would work to make sure that whatever has transpired so far today, at other Boards as well, and what may transpire next week with regards to the allocation.

The list may not define whatever we need to accommodate. Let me try taking a couple of hands, and see if they can get us going in that direction to start out with. I've got three hands

to start with, Justin Davis, Tom Fote, and Jason McNamee. Then let me reevaluate where we are, so we can figure out what we can accomplish today. Justin, you're up.

DR. DAVIS: I've got two questions, and I apologize if this was already addressed. If we aren't going to be able to take this up next week, when would be the next opportunity when these bodies are going to meet jointly, when we could put this on the agenda and address it? That is my first question, and the second question is, obviously the thing here is that this is of concern to the Bluefish Board as well.

Would it be possible, I don't know if this kind of thing has been done before, but could we have in the future at that next opportunity, a joint meeting of the Mid-Atlantic Council, this Board and the Bluefish Board? Because that would seem to be the most efficient way to discuss starting a management action specifically related to sector separation, but possibly for some of these other things too.

CHAIRMAN NOWALSKY: The second question I agree with you that that is one way forward. But again, I think we need some time to figure out what the most efficient way forward is going to be. That is one way forward. I'm not sure that is going to be "the" way forward. With regards to when we would next take these up.

We know we would have joint meetings on the schedule for December. It seems like a long time, but it's only four months here at this point. There were again the intermediate conversations that I had though, since this morning, another idea was since we seem to be continuing to do things virtually, getting people together virtually seems to be easier in many cases, then getting together in person.

There may be consideration of doing something joint, either as part of the Commission's October meeting, something separate, something else as part of the Council's October meeting. I'll defer to staff here if they want to jump in with anything else. But I think my experience with where we're at virtually, is it has certainly opened some avenues to take some things up that we wouldn't typically do, and say well we're

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just going to have another meeting to do it. Chairman Luisi, maybe you would like to chime in on that.

MR. LUISI: Here is how I see it. Over the last few meetings, as we have debated both the bluefish and the summer flounder, scup, black sea bass recreational/commercial amendments. We seem to be following a trend of kind of peeling some things away from those amendments, and they're falling in to this Recreational Reform Initiative.

You know the work that has been put into this to this point has been great, and I don't question whether or not there is an interest by the Board or the Council in moving forward. I just think that before we dive into initiating something, that we should have all of the different elements of what we're considering working on in front of us.

We're very close, I think. But Adam brought up the point that just this morning sector separation from the bluefish amendment was dropped into this Recreational Reform Initiative. Next week we are going to be considering the commercial/recreational allocation amendment again as a joint body.

There is a possibility that some additional elements may fall out of that as well, given the interest today by the Bluefish Board, which many of us serve on, of going forward with more of a sector separation idea as a multispecies, more overarching conceptual issue, rather than a species by species specific level. I think that we certainly could, it has already been determined by ASMFC, and I'm almost certain that Chris and I will be having a virtual meeting in October.

What we should do is we should agree that in October we get together with both the Bluefish, the Summer Flounder, Scup, and Black Sea Bass Boards, and the Council as a joint body, to contemplate and debate the full suite of options that would be available to the

Recreational Reform Initiative, and then determine a path forward from there.

Rather than initiating something today, only to then find that we need to change our direction based on a discussion that happens next week, with the inability to reconsider recreational reform, because it wasn't noticed in the Federal Register. Those are my thoughts, Mr. Chairman, and we'll see what others think. Thanks.

CHAIRMAN NOWALSKY: Yes great, thank you very much. Again, we haven't had a lot of time to talk to staff. Can either of the staffs weigh in? I understand we've heard a lot of concern, specifically on the Commissioner side about continuing to ask them to attend things. We do have the Commission meeting coming up in October, that as you mentioned has now been confirmed will be done virtually. Can we hear anything from either staff about scheduling something that we would have Council members for part of the day, potentially as a joint meeting one of those Commission days?

MS. KERNS: Adam, since this meeting week is just wrapping up, I don't know how many boards need to meet in October. But usually we try to meet the needs of all of the boards, so if that is something that needs to happen, we can obviously try to make sure to accommodate that, to have another similar joint meeting.

CHAIRMAN NOWALSKY: Dr. Moore.

DR. MOORE: Like you said, this virtual format offers us some flexibility. Certainly, if we decided that we could have something for the Board and the Council to consider in October, then certainly we could set up a meeting, either jointly with our meeting week, or maybe you know half a day or part of a day with the Board.

But that highlights an important variable that we need to consider, which is the ability of staff to actually get something done for us to look at. I think, you know based on what I've seen from Julia, and the Steering Committee, we would have enough with a little bit more icing on the cake for discussions in October.

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If that's the case, and Julia can tell me if I'm wrong. If that is the case then I suggest we do that. We basically move forward with a joint October meeting to consider what we actually want to do with this Recreational Reform Initiative. Also, remember that it's part of our 2020 Implementation Plan.

The Council has already considered that we're going to be working on this particular action, so that's why Julia is involved and will be involved. I think October is doable based on what I know. Julia, you can correct me if I'm wrong. Certainly, I think that's probably the preferred way to do it, and at the same time get it done today.

CHAIRMAN NOWALSKY: Do we feel there would be any specific motion needed today, or if we just said that's what we're comfortable and there is no opposition from the body, we could move forward with that by consent without a specific motion? I don't think we would need a specific motion to schedule that, is my thought.

DR. MOORE: Yes, I don't think we need anything today, Adam.

CHAIRMAN NOWALSKY: All right, so I had a couple other hands up. Let me get to them. I think what I would like to do is to steer conversation towards that concept. Is the Board and Council comfortable with getting through next week, seeing if there is anything else that comes out of next week that would also fall into Recreational Reform, giving staff some time to then consolidate that, refine the document with regards to, there is a document if you didn't see it in the meeting materials from staff that summarizes the amendment versus framework addendum.

Potentially revise that, and then work towards getting back together in October to initiate the correct action with a priority of items. Let's try to steer conversation in that direction, unless there is somebody that feels strongly otherwise.

I've got Tom Fote, and Jay McNamee, and Mike Luisi, I've still got your hand up if you had anything to add as Chair. No, all right. We'll go to Tom and then Jay, and again if we can steer conversation towards that great, unless you feel strongly otherwise.

MR. FOTE: Thanks for moving this forward. I have some concerns. The reason I have concerns is that we basically start doing this. What do we look at from NMFS about funding this? What I'm talking about is the fact that many years ago we did a survey, because Bill Hogarth when he was director of NMFS actually gave us some money to do it.

We actually put in a lot of money, to find out what it was costing the fluke tournament. We pulled all the information, we spent \$40,000.00 from Jersey Coast at the time to get that information, kept it going for the next five years, and it sat on somebody's desk. We did the same thing in New Jersey to find out what was being caught on artificial reefs. We spent a lot of money, got grant money to do that, and it sat on somebody's desk.

We need appropriations. It's like Dr. Boreman pointed out on MRIP. When he basically took over, he said that he went into Congress in 2007 and asked for 15 million dollars to really do the program right, and we're still running over the same 11 million dollars. Unless we spend money, we're never going to get better.

I want a commitment from NOAA or NMFS that we are basically going to look at the money that's necessary to do this, because it's going to cost money no matter what we do. Now the second point I'll make, and it's MAFAC, and I sit on MAFAC, it's been working on, we are Dr. Sullivan, and Tony Ralston from ASA, and they are chairing the committee.

We're looking at electronic reporting recreationally, and really centering on the Gulf, because there is a lot of information going off of private recreational anglers, to try to get what catch figures are. We should be looking at the electronic reporting, since that movement is already going forward.

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But my concern is we start doing this, we really need, because we basically told the recreational sector, we're going to do this. We're going to get better, and we never put the money to actually accomplish the task we're going to do. I always feel like I hang people out to dry, because we don't do what we're supposed to be doing, because of lack of funds.

CHAIRMAN NOWALSKY: I'm not sure there is anything that we've listed in Recreational Reform necessarily that promises the angling community that we're changing the process for catch estimates. I think what the impetus for Recreational Reform has been, has been to recognize the concerns about those catch estimates.

Then find ways to manage our process, specification setting, et cetera, to take those concerns into better account, where we can get better data potentially. We certainly can. I think the state level VTR reporting is an area that's been highlighted by both Boards, so thanks for that. I appreciate it. Jay McNamee.

DR. McNAMEE: I'll be super quick. I really support this idea of getting back together in October, to focus in on this, pulling in the Bluefish Board as well. I just wanted one last comment to just really emphasize. You know we've pulled the sector separation item out this morning, with the explicit notion it was going to get dropped. I want to make sure that that is a part of our discussion in October. But generally, I like the concept that kind of developed during this discussion.

CHAIRMAN NOWALSKY: Dewey Hemilright.

MR. DEWEY HEMILRIGHT: It's almost, and this is my thoughts. It's almost like there are two tracks here of thinking on the Recreational Reform. I guess from what little bit I've read, and the work that has been done up to date, it's looking like the Recreational Reform is having to do with staying with MRIP, reforming MRIP, or

smoothing it over, the numbers aren't right, or something like that.

My idea is totally different, and it might not be in my lifetime on the Council, or later on, but I'm looking at the private reporting that's going to have to be more accountability, and less impact too. I look at the bluefish debacle, and I do call it that. But I know what's in North Carolina and other states commercially, and it is my understanding that if it wouldn't be for MRIP and these new MRIP updates, that we probably wouldn't have the mess that we're in with bluefish right now.

While we're looking at the Recreational Reform Initiative, I'm not looking at smoothing over MRIP. I'm looking at another way of accountability, because I can tell you this, each one of us here, you wouldn't allow your livelihood to be managed the way MRIP is. Not managed, let me take that back, the outcome, because of all the unknowns and the highs and lows.

It's affecting folks. It's affecting the recreational industry. I think they deserve to have a better accounting, but right now this is the best available. I'm looking for something that is more directly tied. If you want to use a cat gut resource, you're going to have to somehow figure out some way to drive the angler reporting, whether they like it or not.

You can do compliance assisting for three or four years, but I'm looking and hoping that that Recreational Reform is going to be more than just smoothing stuff over, and trying to figure out the season, because I don't think that going the same route. I want to "so to speak" kind of laugh, a stiff vodka drink. I don't want something watered down. Thank you.

CHAIRMAN NOWALSKY: Thanks Dewey, I appreciate that. One of the items that is on the type of management actions listed under the amendment column is mandatory angler reporting, so that is an item that is in there for consideration. Let me do this at this point. Is there any objection from the Board or Council to taking this up as a joint action with the Bluefish Board in October, after we see what comes out of next week?

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That gives staff time to compile what the items are that have dropped into Recreational Reform? I'm not seeing any hands raised, not hearing anything else. Let me briefly turn to the public. Is there anyone from the public who wants to comment on this? Again, I would just ask if you to make your comment brief.

Offering some reason for us to not head in that direction, or offering your support for what we intend to do, which would be to take this up jointly with the Bluefish, Summer Flounder, Scup, Black Sea Bass Boards and full Council jointly in October. Okay, I'm not seeing or hearing anything there. All right, well given that. I'll turn to staff. Is there anything else we can get out of this agenda item for today, or does that at least give us a direction to know what our next steps will be?

MS. BEATY: I don't necessarily need anything else, so we could be good with that.

CHAIRMAN NOWALSKY: Okay, Chairman Luisi, do you have anything to add?

MR. LUISI: No.

CHAIRMAN NOWALSKY: With that, I believe we have completed all of the joint agenda items for today. The next order of business would be Board only. I don't know, Mr. Chairman, if you want to provide any direction to the Council at this point.

MR. LUISI: Well, I would offer that anybody that wants to participate and hang on the call to listen to the Board's discussion regarding the next topic, they are certainly welcome. But it will be a Board only action, given that we're in this as a joint body, I would recommend staying around if you can for a few minutes.

But I understand, given the time of the day that we're a little bit over our allotted time on the agenda. If you need to go, you know you're welcome to. But we will be taking up the next action as a Board, only to reconvene again next

week. I guess, Mr. Chairman, depending on who's going to stay and who's going to go.

I will recognize that this is Warren Elliot, Laurie Nolan and Steve Heins last, this is their last joint meeting as Council members. Each of them will be leaving the Council. They have one more day next week, and the new appointees will be coming in, they've each had the nine years on the Council, and Steve is moving out of the state of New York.

I do want to take the time to thank them for all their time over the years, participating with me as Council members with the Board. I don't know if you have anything else you want to add, Mr. Chairman, but I just wanted to recognize them, thank them for their service and their time, and wish them the best as they move on to new things. Thank you.

CHAIRMAN NOWALSKY: Yes, and I would like to extend the same word of thanks from the Board's perspective. Thank you very much. Warren has now joined us at the Commission. However, the state of Pennsylvania is not on this Board. Maybe Warren will find a way to petition the Commission to get Pennsylvania added for Summer Flounder, Scup, and Black Sea Bass. But again, I'll echo those thanks to those Commissioners as well. Thank you very much.

**REVIEW AND CONSIDER APPROVAL OF THE
MASSACHUSETTS 2020 BLACK SEA BASS
RECREATIONAL PROPOSAL**

CHAIRMAN NOWALSKY: With that, let's go ahead and move on to the next agenda item. Again, this is a Board only decision item. Review and Consider Approval of the Massachusetts 2020 Black Sea Bass Recreational Proposal. I will go ahead and turn to staff, in conjunction with the state of Massachusetts for a presentation on the decision before us today.

MS. MESERVE: Caitlin, did you have any introductory remarks before I go ahead?

MS. STARKS: No, I think you can go ahead. I will follow up with the Technical Committee, AP, and LEP comments.

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MS. MESERVE: Okay, great. Being the last issue on the last day of a four-day meeting, I don't know if that is a blessing or a curse, but I appreciate everyone sticking around for it, given our overdue agenda at this time. Massachusetts has submitted this proposal for black sea bass, the for-hire fishery as a conservation equivalency proposal.

This is a slightly different version than what was given to the Board in June, when discussion on it did not occur, because a decision was made to wait for a pending Executive Committee or Policy Board guidance on this type of proposals for this year, and it was determined that there wouldn't be any particular constraints placed on it.

With the Board Chair and staff's blessing we put this forward to the Board for today. I just have a couple slides to walk through to brief everyone on it. This proposal is to add days to the end of the Mass for-hire black sea bass season, to account for a later season opening. It would be for 2020 only. It results because we issued permit conditions that prohibited all for-hire fishing activity in the state of Massachusetts from April 27 to May 24, due to COVID-19 safety measures that came from an Executive Order.

Permit conditions, if you're not familiar with them, they essentially have the same force and effect as regulations. They are enforced by law enforcement. DMF would sanction a permit, revoke it or suspend it, potentially for violations of permit conditions, the same as we would regulations.

Law Enforcement did report that these permit conditions that prohibited for our activity during that time period were well complied with, and they did conduct normal in-person operations during that time. The consequence to the for-hire black sea bass season, which normally opens on May 18, is that there were seven days closed for for-hire fleet. We would like to add a number of days to the end of the

season that would project to have a status quo harvest for the for-hire fleet. We're not proposing any revisions to the private angler season, because it was not closed during that same period. That season will continue to end on September 8. This would create a temporary sector separation in Massachusetts. That is something that we have had in the past in the sea bass fishery in Massachusetts, seven or eight years ago, but not in recent years.

It is something already occurring elsewhere along the coast, so that wouldn't be a precedent setting action to have sector separation here. I wanted to just give a couple descriptions of our sea bass fishery in Massachusetts. This graph shows the harvest by week, with the red box being around Wave 3. You can see that there is really a spike there in the Wave 3 landings. It is generally the most important time of the season, it is when black sea bass arrive in state waters, they are aggregated.

They are near shore, they are aggressive feeders, and it's a very productive fishery, as you can see in this graph. Why the big fuss about seven days, you might be asking yourself. It's because we already have that short season of 114 days, the shortest along the coast for the sea bass fishery, and because of the importance of Wave 3 to a fishery.

The other thing to note in this graph is the season length. Those three bars, you near the end of at the gray bars going across. That shows our season length. If you go to the next slide, Maya. That red box now is around our Wave 5 data. You can see we don't have much of it, but the trend is very different. Our catch rates are much lower.

Because we haven't been allowed to have a season that is opened very far into September, we don't have great data. But anecdotally, we certainly know that after Labor Day effort declines, as summer vacation is coming to an end. The weather starts to turn, and there are less favorable days to be out there, and fish availability declines as the fish move offshore, and boats have to travel much further to harvest them.

We do have some higher PSE data on our Wave 5 data, which comes into play when we talk about the

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actual calculations that were done to figure out the conservationally equivalent number of days to add to the end of the season. This uses a very standard conservation equivalency message, to look at a seasonal change where we compared a wave specific daily harvest rate in Wave 3, to that in Wave 5, using a prior multi-year average.

Because we're using prior year data, this proposal was not impacted by MRIP data availability issues in 2020 via the late onsets of APHIS sampling or the fact that we don't have Wave 3 data yet. It's similar to the type of approach that Virginia and North Carolina use when they are offset for the harvest that they have in their February fishery, and account for it later in the year. Using a comparison of Wave 3 or Wave 5 daily harvest, averages in the for-hire fishery alone, we would be able to add 9 days in Wave 5 for every day that we closed in Wave 5.

That was our initial analysis that we put forward to the Technical Committee. The TC did have concerns about what we knew with those high PSEs on the Wave 5 data, because there are not a lot of intercepts available when your fishery has only been allowed to be open for one or two weeks in that wave. As an alternative, we offered up using Wave 4 data, the adjacent wave. The catch estimates then, which have lower PSEs as a conservative alternative, as a proxy for the Wave 5 data. Using that we could add two days in Wave 5 for every day that was closed in Wave 3. That's what you'll see as Option B in the proposal. Last, in this version of our proposal, we included in Option C, which is really our preferred. We appreciate the Technical Committee's concerns about the high PSE data that were associated with Option A, which would extend our season to October 31 for the for-hire fishery.

But we really believe that Wave 4 data overly exaggerates Wave 5 harvest, which is shown as Option B, which will just get us out to September 21. We're presenting a compromised option, which would get us

through October 9, and that day is half way in between Option A and B, and it also is the closures of our summer flounder recreational fishery, two species that are frequently targeted together, and black sea bass discarding is certainly happening while fluke are being targeted by the for-hire fishery, or they would be as the for-hire fishery continues into October.

Again, this is a proposal. It's specific to the for-hire fishery. We would put any seasonal extension into place through permit conditions, the same as the fishery was closed in the beginning of the year. The last point I wanted to make is that we don't think that the concern that has been expressed in some conversations, about what's been going on with 2020 private recreational harvest, to be relevant to this proposal.

Had this been a seed proposal that was submitted in February, if we had been able to know what the Governor was going to do to respond to COVID-19, and that the for-hire fleet was going to be closed for so many days, and been able to put this proposal forward prior to the season. We would only be looking at the for-hire data, without any knowledge of what was going on in the private recreational fishery.

We have been trying to look at, and we really don't know yet what May and June or the rest of the season looks like in Massachusetts. Some of our Wave 2 upper data that came out shows an increase in shore-based effort for all the species targeted, but black sea bass is rarely caught in Massachusetts from shore.

During that wave at least there was a decline in vessel trips being taken. We're also aware of some things, you know just anecdotally. Some marinas are being threatened with lawsuits, because they didn't get people's boats ready for the season when they wanted them. There are some reasons to believe that we might not have the huge increase in private recreational harvest that has come up in some conversations.

I appreciate the Board's time on this. Option B here is our preferred option, a May 25 to October 9 season, just in 2020 for the for-hire black sea bass season in Massachusetts. After Caitlin gives the Technical

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Committee's input then any questions, I think Ray Kane may have a motion that he would like to make. Thank you.

CHAIRMAN NOWALSKY: Yes, I'm next going to go to staff, and then instead of stopping for questions, I'm going to go right to Ray Kane for a motion. Then we can take up questions and comments relative to that motion. I will just caveat that with, should there be a hesitation on the Board to offer a second, because somebody wants an answer to a question before offering a second. I'll accept that first. If we can't get a second then we'll go back and do questions. Otherwise, my preference is staff does their presentation on AP and Law Enforcement. We'll see if we can get a motion up, and then we'll take them from there. Okay Caitlin, thank you very much.

**SUMMARY OF TECHNICAL COMMITTEE,
ADVISORY PANEL, AND LAW ENFORCEMENT
COMMITTEE COMMENTS**

MS. STARKS: I'll just summarize quickly the Technical Committee's recommendations on the proposal, as well as some comments from the AP and the LEC. First the TC didn't have time for a second call to discuss the updated proposal that Nichola just presented on, but they did review it by e-mail and they added some things to their recommendations.

Via e-mail from the memo dated June 11, 2020, so I'm mainly focusing on those. They added that on Option A the TC has some significant concerns with the low precision of the data that was used, being the very high PSEs for Wave 5. Therefore, it does not support this option for conservation equivalency.

The TC recommended using Option B for the Massachusetts conservation equivalency proposal, because this uses the ETC recommended method to calculate the daily harvest rate, which is to use the average of the 2018 to 2019 Wave 4 for-hire harvest rate as a proxy for Wave 5. That is used to calculate the

resulting use of modification to achieve conservation equivalency.

In addition, it also addresses their concerns about data uncertainty, and reduces the risk of producing higher than expected harvest in Wave 5. Then on Option C, the TC noted that this option doesn't have a quantitative basis, and therefore it does not meet conservation equivalency standards from a technical standpoint.

I'll just quickly note that one TC member added a comment about the assumption to justify Options A and C that harvest rate in Wave 5 would be substantially lower than Wave 3 or 4. They thought that this was most likely not a valid assumption, given that states that have had Wave 5 open in recent years have seen some of their highest harvest rates in that wave.

That TC member also noted that Wave 5 harvest rates are very, very dependent on weather. The updated proposal was also distributed to the AP by e-mail, and several e-mail comments were received. A few were also given at the end of the July 29th AP meeting. Three AP members supported the Massachusetts proposal.

One added that all states should have the same opportunity as Massachusetts, because for-hire boats in all states were and will be limited, due to COVID-19 restrictions. This person recognized that all states have a chance to submit proposals, but their claim was that some state agencies don't have the capacity to produce a proposal like Massachusetts. They thought that more states should be afforded more of an opportunity.

Then another comment opposed the Massachusetts proposal, stating that the recreational harvest is not separated by sector, and so for-hire boats were limited. The private effort increased during the early part of the season, and therefore this Advisor thought we shouldn't approve the proposal without more information on the private sector harvest. The LEC also reviewed this proposal, and seven members sent comments on the proposal by e-mail. The overarching message from the LEC is that they continue to

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emphasize the importance of consistent regulations in shared water bodies. Several members repeated that differences in size, season and bag limits create confusion, and can reduce compliance and enforceability. But they also noted that this is kind of a moot point, with regards to the Massachusetts proposal, because Massachusetts regulations are already different from their neighboring states.

However, they would prefer if consistent regulations were in state waters that are shared. Then in general, the LEC supported this particular conservation equivalency proposal in light of COVID-19, and the potential it has to mitigate some impacts of the pandemic on the for-hire fishery. But two members did express that they only support it on a temporary basis under the current conditions, and not as a standard allowance. That should be the last slide, so I can take any questions as Adam stated, to the motion.

CHAIRMAN NOWALSKY: Thank you very much, Caitlin, I appreciate it. Given that, let me go ahead and turn to Ray Kane. Let's see what happens with regards to a motion, and then once we get a motion up, we'll go ahead and have discussion or questions about the proposal. Ray, you're up. Welcome! Good afternoon. In the interim, Nichola, by chance do you have Ray's motion?

MR. RAYMOND W. KANE: Am I unmuted now?

CHAIRMAN NOWALSKY: Yes, you are wonderful right now, thank you.

MR. KANE: Caitlin, have you got my motion that you can put on the board?

MS. STARKS: I think we have one that will suit your needs. Maya.

MR. KANE: Well, I can read the motion. Move to approve Option C in the Massachusetts conservation equivalency proposal to modify

the state's 2020 black sea bass for-hire season to May 25-October 9.

CHAIRMAN NOWALSKY: I think the only difference from what's on the screen right now is that Mr. Kane offered the specific dates. If we could include the change there, that would say May 25-October 9. Does the motion on the screen reflect your intended motion?

MR. KANE: Yes, it does

CHAIRMAN NOWALSKY: Okay, and that has already been read by Mr. Kane. Do I have a second for the motion? I've got Justin Davis' hand up. Justin, were you seconding the motion?

DR. DAVIS: That's correct, yes.

CHAIRMAN NOWALSKY: Let me get a show of hands at this point of people that want to speak in favor of the motion. First let me do this. Is there anyone that has specific questions first that wants to speak, because they don't know where they stand on the motion. If you need to ask a question first, with regards to forming your opinion on where you stand on the motion, because of a question. Let's go ahead and get those hands first. Nichola, your hand was still up. Was your hand just up from trying to help Ray, or did you have something else to add? No, your hand is down. The two people I've got right now that have questions, are Roy Miller and Mike Luisi. Roy, you're up. Let's start there.

MR. MILLER: Is this the very first proposal that we've seen as a management body for conservation equivalency using COVID-19 as the reason for the proposal? My recollection, it is the first time we've seen such a proposal. Therefore, my question. Go ahead.

CHAIRMAN NOWALSKY: I was going to say, I would call this Proposal 1A. We saw the proposal from Massachusetts back in June that included only Options A and B. Since then they've resubmitted the proposal that included Option C. I won't speak for other boards, but I will say that this Board has received no

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other state proposals for a change to their season related to COVID-19.

MR. MILLER: Let me elaborate on why I asked that. Let's assume for the moment that this could be precedent setting. I looked at Delaware's seasonality for black sea bass, and we have a season that opens in mid-May and closes the end of December. Now let's assume that Delaware lost a couple weeks of opportunity for the for-hire fishery to pursue black sea bass in May, because we were only in Phase 1 of the Governor's reopening scenarios.

We didn't achieve Phase 2 until later in May. Is it reasonable to wonder then, if Delaware missed a couple of weeks of opportunity for the for-hire fishery, could Delaware apply for some days in January to make up for the lost days in May? If you follow my logic, I'm wondering if action taken today, if it's positive.

I'm not saying I disagree with the Massachusetts proposal. I certainly understand and sympathize with what they're doing. But is it precedent setting, and would other states like Delaware then be encouraged to submit proposals for extensions beyond the end of the calendar year, say into January? That is my question. Thank you.

CHAIRMAN NOWALSKY: Roy, let me first say that I think a state could potentially ask for something anytime they wanted to, whatever that ask may be. I'll follow that up with number one, that a CE proposal would need to bring forth some documentable proof that by a regulation, the fishery was shut down for some point in time, and as a result of the fishery being shut down by a regulation, you're looking to extend the season to some other timeframe via a change in regulation.

Now with regards to Massachusetts CE proposal, I think there is a little bit of a gray area here, with regards to, as Nichola highlighted. Technically they didn't shut down via regulation, but from their interpretation,

because of their permitting conditions, even though they weren't shut down via regulations, permitting regulation had them shut down.

I don't know if staff wants to weigh in any more. You know there has been discussion about whether this was a true CE. I will offer that I was willing, as Board Chair, to allow this to come forward to the Board to give Massachusetts the opportunity to state their case for why, even if it didn't technically have the season shut down in Wave 3 via regulation. They had regulations in place via permit to shut the fishery down. Ultimately, it's going to be at the discretion of the individual delegates here, as to whether or not they agree with that or not, as to whether this is an actual CE proposal. The second thing I'll add is that there were discussed by this Board previously, some timelines put in place for submitting proposals if states were going to do so.

That deadline has since passed. I think there was a grace period, if you will, that was extended after the Policy Board had met to decide whether or not to set forth sideboards on regulations that would come forward, to allow for anything else, and nobody else brought anything forward. With regards to your question about precedent setting.

What I told the Executive Committee at one of their meetings, is that I as Board Chair would allow a proposal to come forward to my Board, unless the Executive Committee and/or staff and Commission leadership said no, this flies in the face of what our processes are, and should not be allowed.

Nobody told me that, that that was the case with regards to the Massachusetts CE proposal. Therefore, that is why we're here today. Beyond that, all I could say is any state can submit anything they want, whether or not I get new advice from Commission leadership whether to allow that to come before the full Board. I don't know the answer to that. If Commission leadership wants to weigh in, they're welcome to.

But I think that is where I would stand is one, does the Board have something in place? I believe, personally that this Board has set forth some guidelines for when

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proposals are due. I would say the deadline has since passed. I would say that as Board Chair, unless I was told by Commission leadership, you should consider this proposal. I would be inclined at this point not to bring any additional proposals before the Board.

MS. KERNS: Adam, can I clarify one point for you to that?

CHAIRMAN NOWALSKY: Please, by all means do.

MS. KERNS: I think that the deadlines that we gave you were for this meeting. Based on the Policy Board not adopting those guidelines that had come out of the Executive Committee, it put an opportunity out there for any state to submit a conservation equivalency proposal, to change the recreational measures for any species.

They just have to provide the evidence that the measures were equivalent to their current set of measures. I don't even know if a state would have to actually show that there is a regulation. You know it would depend on how they went about saying that this versus that is conservation equivalent.

At any point in time, if a state wants to bring forward a conservation equivalency proposal. They just have to follow the timelines that are outlined in the conservation equivalency guidelines, in terms of when it would be taken up by a management board. Obviously, you know if it's outside. If that state hasn't brought something forward to the Board to request it to be reviewed, it can be reviewed by the Board Chair, and the Board Chair can determine if they can fall within. There is a one-month timeframe, I think it is, in which you have to be within to submit for the next meeting. The Board Chair can make an exception for that timeline, if he feels like it's a possibility and an important issue to be taken up immediately at that next meeting. I think there is, under the conservation equivalency guidelines there is

opportunity for other proposals to come forward.

CHAIRMAN NOWALSKY: Well, that's great, Toni. I will not be considering any other state proposals at this Board meeting. To Roy's question then, if somebody wanted to bring something forward, they could review those CE proposal guidelines, and be considered at some future data. Now, it wouldn't be next week, because that is outside that timeframe. I think if somebody brought something forward to me prior to next week's meeting.

They would have to document one heck of an emergency to have to bring it forward next week. I won't say it's impossible, but that would leave us with the next scheduled Board meeting being sometime in October, so I'm not sure what relief that would get any other states for the remainder of the 2020 fishing year. Roy, have we gone into enough detail for you, or do you have anything still lacking in information, with respect to your question?

MR. MILLER: Thank you for your thorough response, and thank you, Toni. The only question I had is, if the state were to put together a proposal that carried over into the new year, particularly during a portion of the year that is normally closed in that state to fishing. Is that something that can be considered, or does everything stop at the end of the calendar year in this regard?

MS. KERNS: Roy, I think it would stop at the end of the calendar year, because you would be asking for a change in your measure that is conservation equivalent to your current fishing year's measures. I suppose you could ask for changes in bag and size limit, but your season, since it's already going to the end of the year. I don't know how you would ask for conservation equivalency within that year, for a change in your season.

MR. MILLER: That is what I wanted to find out, if it might be possible to extend the season into January that is otherwise closed by state regulations.

MS. STARKS: This is Caitlin, just also adding that federal waters are closed in January, so for some states that is a problem.

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MR. MILLER: Yes, a problem in our state too. Thank you.

CHAIRMAN NOWALSKY: Mike Luisi, you've been very patient. Go ahead.

MR. LUISI: I'll be brief. I do want to say that I fully support the concept of conservation equivalency, and states using conservation equivalency to address needs of their fisheries based on whatever needs they might be. I am troubled though by two things. One of them is something that you brought up, Adam, and I might need somebody from Massachusetts to help me understand, whether the for-hire fleet had the ability to fish during this closed period, or not. When I read through this, my understanding was that the fishery was closed, and that gave me less concern for the for-hire fleet if they were closed, and we can get some assurance from Massachusetts that they weren't fishing anyway. You know this kind of goes towards Roy's point about setting a precedent for lost opportunity. If this was just the case that based on the COVID pandemic that we are going to extend the season, because of the perception of lost opportunity.

It would be an easy decision for me to say no, that is not a precedent that I want to start. However, if the fishery was closed, and the for-hire fleet was unable to participate for the number of days being claimed. I do have no problem in the use of conservation equivalency for an extension later in the year.

The one area of concern is the gray area that was mentioned. My second area of concern has to do with the method used to calculate that extension. My question to Massachusetts would be, if this were a normal set of circumstances and you were just making adjustments to your season, to account for the needs of your fishery, and you had an approved method based on the Technical Committee advice.

I'm just wondering why you have failed to move forward with that advice, rather than putting forth an option that as a Technical Committee has commented, does not have the quantitative analysis to back up the extension. I certainly would support the Option D, which is supported by the Technical Committee. I'm just having trouble with, I guess it's a hybrid version, or a massaged version of the standard methodology.

MS. MESERVE: May I respond, Adam?

CHAIRMAN NOWALSKY: Yes, go ahead, Nichola. I'll just let you take it.

MS. MESERVE: Thank you. Yes, so this was a closure to all for-hire fishing activity for those seven days. The permit conditions restricted all for-hire fishing activity. They were off the water. This is not a proposal to respond to not being able to get clients, or anything else. There was a closed fishery.

I think the gray area that Adam may have used that terminology, is that it was done by permit conditions as opposed to a change in our regulations, which could not be completed, given the timeline of the evolving situation, and the ability to do regulations that quickly. The second part there about the methods is that what we offered to the Technical Committee, Option B, the more restrictive one. That was an alternative that we put forward, and it does have their blessing.

But in more thinking about it, just feel that it's very restrictive. The Wave 5 data may be the best reflection of what is happening in Wave 5 that we have. It just has high PSEs. We put forward the better option. We have as much uncertainty about Wave 4 being a valid proxy for Wave 5. But everything that we know about sea bass migration, and when they leave our waters, suggests that the rates should decline, from Wave 4 to Wave 5 in Massachusetts.

We're at the northern extent of the species range. The for-hire fleet will tell you that they have travel further to get fish in Wave 5, that they're not aggregated like they are earlier in the season when they're nearshore. The comments that there are other states where they have some of their highest

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landings in Wave 5. I assure you that those are states further to the south of us, who have a different seasonality of sea bass accessibility to their anglers.

MR. LUISI: Thank you, Nichola. I appreciate that.

CHAIRMAN NOWALSKY: At this point in time, I'm going to turn to Justin Davis, if he would like to speak as seconder of the motion, followed by that I will ask for a show of hands for people that want to speak in favor, as well as those who want to speak against, where against might also include. Well either side can go ahead and provide some modification to this motion, if they wanted to go with that route, as opposed to just voting it up or down. First Justin, and then I'll ask for additional hands.

DR. DAVIS: I would like to speak in support of the motion. I think this is a clear-cut case, where the COVID-19 pandemic has had a negative impact on this particular fishery sector. It is clear that they were prohibited from fishing for this period of time, based on that Figure 1 we saw in the proposal it's clear there was substantial lost opportunity during that time.

I think the proposal is certainly justified. I find the rationale of using the Wave 5 data, despite the high PSEs to be persuasive. Certainly, MRIP data, when you start splitting it down into the mode level for a lot of fisheries is going to have high PSEs, and that is just something we live with all the time when we're setting measures.

From my experience with the black sea bass fishery in New England at that time of year, certainly availability is changing on almost a week to week basis. The fish are on the move, moving offshore, and so I definitely find the rationale that although the data are sparse there in Wave 5, they are probably more reflective of the availability of the resource at that time to the fleet.

Just in general I feel like this is a situation where the risk of sort of a big increase in harvest that is going to cause like a big overage of the RHL is really minimal. We're talking about providing a little bit more opportunity for one sector in one state. This is a species where the stock is very robust, not overfished. Frankly, this is a species where we've overshot RHLs in recent years, and have still kept status quo recreational measures, for a variety of reasons.

I'm personally not troubled by the very small possibility here of you know harvest maybe being slightly higher in Massachusetts than it would have been otherwise. I think that just basically comes down to inherent variability in the fishery. I'm fully in support of this proposal. Almost everybody in our states, we've been hearing from our for-hire folks that they've been hugely impacted by this pandemic. I think we should be doing whatever we can to help those folks out, and I support this proposal. Thanks.

CHAIRMAN NOWALSKY: All right, so let me turn to the Board, a show of hands of people that want to speak in favor of the motion right now. Okay, I've got Jay McNamee. Thank you, you could put that hand down. Let me get a show of hands to those who want to speak against. Okay, I've got Joe Cimino and Chris Batsavage. All right, so I will start with, since we've heard from Nichola and Ray Kane made the motion, and Dr. Davis. Let me go to Joe, then I'll go to Jay McNamee, then I'll come back to Chris Batsavage. Go ahead, Joe Cimino, you're up.

MR. CIMINO: Once again I find myself following Justin and have a hard time disagreeing, at least to an extent. However, once again I find myself in a slightly different position, in that Mass is in a unique position. Here in New Jersey, they certainly wanted to do something like this. It really wasn't appropriate for us to do, because we didn't have fully closed days, except for a single day.

However, I do have some concerns with an RHL. We all deal with the frustration of a healthy stock, and an RHL that is still prohibitive to us. But yet there it is, and you know we have the possibility of exceeding that this year, and it's something that as managers we need to deal with. I am supportive of the TCs

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recommendation, so please keep that in consideration. However, I don't think I can support this motion.

CHAIRMAN NOWALSKY: Jay McNamee.

DR. McNAMEE: You know for me this one is really straightforward. It's specific to what happened this spring, where the state of Massachusetts closed their fishery, clearly closed it. It wasn't like an indirect act. It wasn't conjecture or anecdote. They closed the fishery. That part for me is really cut and dry, and it's what makes this proposal compelling for me.

That fact, coupled with, they're asking for days during the part of the year that they have actually really low landings, just to eke out a couple of additional days. It is unfortunate the nuance between Option B and Option C. But in the end, it's kind of quibbling over a couple of days here and there during what is a very minimal time of year for them anyways.

I'm comfortable. If they want Option C, I'm okay with that. They did the math, and as Nichola noted, you know the nuance that the Technical Committee was hanging their hat on, versus what the state of Massachusetts is trying to get after. I'm not super hung up on that. I wish it synced up, but it didn't in this case. I'm in support. I don't see, in this really clear cut, really unique situation why we can't accept this CE to allow that party and charter fishery to get a couple of days in the fall.

CHAIRMAN NOWALSKY: Chris Batsavage.

MR. BATSAVAGE: The people in support of the motion I think framed out why. You know Massachusetts proposal, and how unique it is, in terms of it being a CE proposal for this, and how it differs from others. But we've also heard that this, in terms of precedent setting, which is a concern of mine, and also other CE proposals that could come forward, and also the MRIP

uncertainty, which again I think with the time of year the landings probably won't be very high.

But as we found out this year, where you start opening up a season during times, the shoulder period, so to speak. A couple of intercepts could lead to some surprises, as far as MRIP estimates go. But I think the one thing that concerns me about any CE proposal, not just Massachusetts, for this year, is we are really flying blind, as far as essentially very few fishery independent surveys taking place this year. All of us get notices in our e-mails about NEMAP and other federal science surveys being postponed or canceled this year, due to COVID-19 concerns. Although the stock of black sea bass is robust right now, as of the last stock assessment. There is just that underlying concern that we're really just missing a lot of data on all these species in 2020.

Then we'll be going into future years with just kind of a big dark area of data, and try to figure out what's going on in the future. That is really my concerns over the CEs in general, not necessarily Massachusetts in particular. I think they made their case very well, but this isn't the year with everything else going on.

CHAIRMAN NOWALSKY: Let me ask for one more round of hands here. Do I have a show of hands for additional people that want to speak in favor? Nichola. Okay, do I have any other hands that want to speak in opposition? Okay, seeing none. What I'm going to do is I'm going to go to Nichola.

I will then ask if there is any public comment on this, and then I will bring it back to the Board, and if there is no other hands, we'll call the question, unless there is anyone else that feels the need to respond based on what we heard from the public or from Nichola. Nichola, go ahead please.

MS. MESERVE: I just wanted to point out, which probably doesn't need to be said. There is an additional buffer on the for-hire fishery, likely in all of our states, which is the ongoing COVID situation, quarantine rules that are in effect that likely are going to last into the fall. I think that adds the additional buffer to the uncertainty that is associated with us gating these days on the end of the season.

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CHAIRMAN NOWALSKY: Is there anyone from the public that would like to comment on this motion, raise your hand, or if you don't have the ability to do so, or are having technical difficulties, just go ahead and speak up, please. All right, seeing nothing from the public regarding hands or anything on here.

I'm going to give the Board two minutes to caucus on this. I know I've got an issue here in that I think I just lost our Administrative Commissioner, due to a power problem. I at least need two minutes to try to get back up with him, so we'll come back here shortly. A couple minutes to caucus.

Okay, let's go ahead and bring this back to the Board then. Move to approve Option C in the Massachusetts conservation equivalency proposal to modify the black sea bass recreational for-hire season for the dates of May 25-October 9. Motion by Mr. Kane, second by Dr. Davis. All those in favor of the motion, please raise a hand. One vote per delegation.

MS. KERNS: I have Maryland, Rhode Island, Connecticut, Mass, Delaware, PRFC.

CHAIRMAN NOWALSKY: Thank you that would be 6 votes in favor, I agree. You can clear those hands, please.

MS. KERNS: I will clear them. Cleared.

CHAIRMAN NOWALSKY: They all appear to be down. Let's just make sure we're starting with a clean slate here. All those states in opposition to the motion, please go ahead and raise a hand, one vote per delegation.

MS. KERNS: I have New Jersey, Virginia, North Carolina, and New York.

CHAIRMAN NOWALSKY: Okay that's four. You can clear those hands. Abstentions.

MS. KERNS: I have NOAA Fisheries and U.S. Fish and Wildlife Service.

CHAIRMAN NOWALSKY: Okay. The motion carries, 6 in favor, 4 opposed, 2 abstentions and that is all 12 votes, so there are no null votes. All right, thank you very much. Is there any other business to come before the Board urgently that we can't take up? I know Justin Davis had an item.

He and I have exchanged some communications offline. He is going to bring it to us next week as other business. Hopefully we don't run into the same time constraints then. Is there anyone else who has urgent business to come before the Board under other business? Okay, not seeing any hands raised nor voices, and having completed the agenda before us. Staff, anything else I missed here to get before the Board?

MS. KERNS: Not that I know of Adam, thank you so much.

ADJOURNMENT

CHAIRMAN NOWALSKY: Okay, my thanks to everyone again as well, and we are adjourned, and we'll talk to everybody next week when we're convened again shortly with the Council. Thanks again.

(Whereupon the meeting adjourned at 5:10 p.m. on
August 6, 2020)

Draft Addendum for Public Comment

Atlantic States Marine Fisheries Commission

**DRAFT ADDENDUM XXXIII TO THE SUMMER FLOUNDER, SCUP,
AND BLACK SEA BASS FISHERY MANAGEMENT PLAN
FOR PUBLIC COMMENT**

Black Sea Bass Commercial Management



August 2020



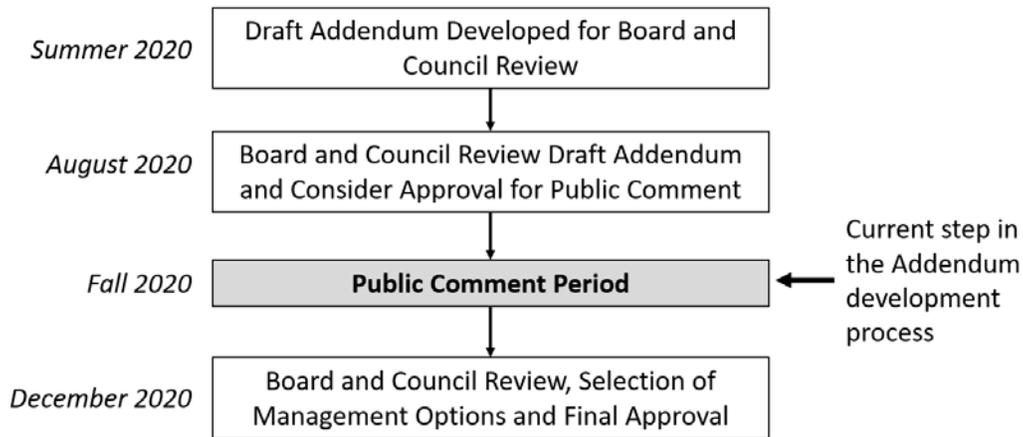
Sustainable and Cooperative Management of Atlantic Coastal Fisheries

Draft Addendum for Public Comment

Draft Addendum for Public Comment

Public Comment Process and Proposed Timeline

In October 2019, the Summer Flounder, Scup, and Black Sea Bass Management Board (Board) initiated development of Draft Addendum XXXIII to the Interstate Fishery Management Plan (FMP) for Summer Flounder, Scup, and Black Sea Bass. The Draft Addendum considers modifications to the black sea bass commercial state allocations. In December 2019, the Mid-Atlantic Fishery Management Council (Council) initiated a complementary amendment as a parallel action to the Board's Draft Addendum. The amendment will consider including the state specific commercial allocations in the Council FMP. This document presents background on black sea bass commercial management and a range of management options for public consideration and comment. The addendum process and expected timeline are below.



The public is encouraged to submit comments regarding this document at any time during the public comment period. The final date comments will be accepted is November 13, 2020 at 11:59 p.m. Comments may be submitted at state public hearings or by mail, email, or fax. If you have any questions or would like to submit comment, please use the contact information below. **All comments will be made available to both the Commission and Council for consideration; duplicate comments do not need to be submitted to both bodies.**

Mail: Caitlin Starks, FMP Coordinator
Atlantic States Marine Fisheries Commission
1050 North Highland Street, Suite 200 A-N
Arlington, VA 22201

Email: comments@asmfc.org
(Subject: Draft Addendum XXXIII)
Phone: 703.842.0740
FAX: 703.842.0741

Tips for Providing Public Comment

We value your input, and to be most effective we request that your comment include specific details as to why you support or oppose a particular proposed management option. Specifically, address the following:

- Which proposed options/sub-options do you support, and which options/sub-options do you oppose?
- Why do you support or oppose the option(s)?
- Is there any additional information you think should be considered?

Draft Addendum for Public Comment

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Draft Addendum for Public Comment

1.0 Introduction

Draft Addendum XXXIII proposes alternative approaches for allocating the coastwide black sea bass commercial quota among the states¹. On October 9, 2019, the Atlantic States Marine Fisheries Commission's (Commission) Summer Flounder, Scup, and Black Sea Bass Management Board (Board) approved the following motion:

Move to initiate an addendum to consider adjustments to the commercial black sea bass allocations consistent with the goal statement and options developed by the Board.

In December 2019, the Council initiated a complementary amendment as a parallel action to the Board's Draft Addendum, which will consider including the state specific commercial allocations in the Council FMP. These actions have two goals:

- To consider adjusting the current commercial black sea bass allocations using current distribution and abundance of black sea bass as one of several adjustment factors to achieve more balanced access to the resource. These adjustment factors will be identified as the development process moves forward.
- To consider whether the state allocations should continue to be managed only under the Commission's FMP or whether they should be managed under both the Commission and Council FMPs².

The management unit for black sea bass in US waters is the western Atlantic Ocean from Cape Hatteras, North Carolina northward to the US-Canadian border. The black sea bass fisheries are managed cooperatively by the states through the Commission in state waters (0-3 miles), and through the Mid-Atlantic Fishery Management Council (Council) and NOAA Fisheries in federal waters (3-200 miles).

The Council and Commission are both responsible for implementing the annual coastwide commercial quota, but only the Commission is responsible for managing the state by state allocation of the coastwide quota. The current state quota allocations were established in 2003 through Amendment 13 to the Summer Flounder, Scup, and Black Sea Bass FMP, and extended indefinitely through Addendum XIX (2007).

This draft addendum is proposed under the adaptive management procedures of Amendment 12 to the Summer Flounder, Scup, and Black Sea Bass FMP.

¹ The Commission and Council are also in the process of developing a joint Amendment for Summer Flounder, Scup and Black Sea Bass to consider modifications to the commercial and recreational sectors allocation. A change to the overall allocation to the commercial sector could impact the amount of quota available to the states, but would not impact the state allocations of the commercial quota. Information on Commercial/Recreational Allocation Amendment can be found at <http://www.mafmc.org/actions/sfsbsb-allocation-amendment>.

² In this document it is noted that the Board **and** Council could choose between proposed management options to modify the black sea bass state commercial allocations. However, if the two management bodies elect not to include the black sea bass state commercial allocations in the Council's FMP, only the Board would select the management program.

Draft Addendum for Public Comment

2.0 Overview

2.1 Statement of Problem

State allocations of the commercial black sea bass coastwide quota were originally implemented in 2003 as part of Amendment 13, loosely based on historical landings from 1980-2001. The state shares in Amendment 13 allocated 67% of the coast-wide commercial quota among the states of New Jersey through North Carolina (North of Cape Hatteras) and 33% among the states of New York through Maine. These state commercial allocations have been unchanged for 17 years.

Over the last decade, the distribution of the black sea bass stock has changed, abundance and biomass have increased significantly, and there have been corresponding changes in fishing effort and behavior. According to the most recent black sea bass stock assessment, which modeled fish north and south of Hudson Canyon separately, the majority of the stock occurred in the southern region prior to the mid-2000s (NEFSC 2019). Since then the biomass in the northern region has grown considerably. Although the amount of biomass in the southern region has not declined in recent years, the northern region currently accounts for the majority of spawning stock biomass (Figure 1). This shift in black sea biomass distribution has also been supported by peer reviewed scientific research (e.g., Bell et al., 2015).

In some cases, expansion of the black sea bass stock into areas with historically minimal fishing effort has created significant disparities between state allocations and current abundance and resource availability. The most noteworthy example is Connecticut, which has experienced significant increases in black sea bass abundance and fishery availability in Long Island Sound in recent years but is only allocated 1% of the coastwide commercial quota (this allocation was based loosely on landings from 1980-2001).

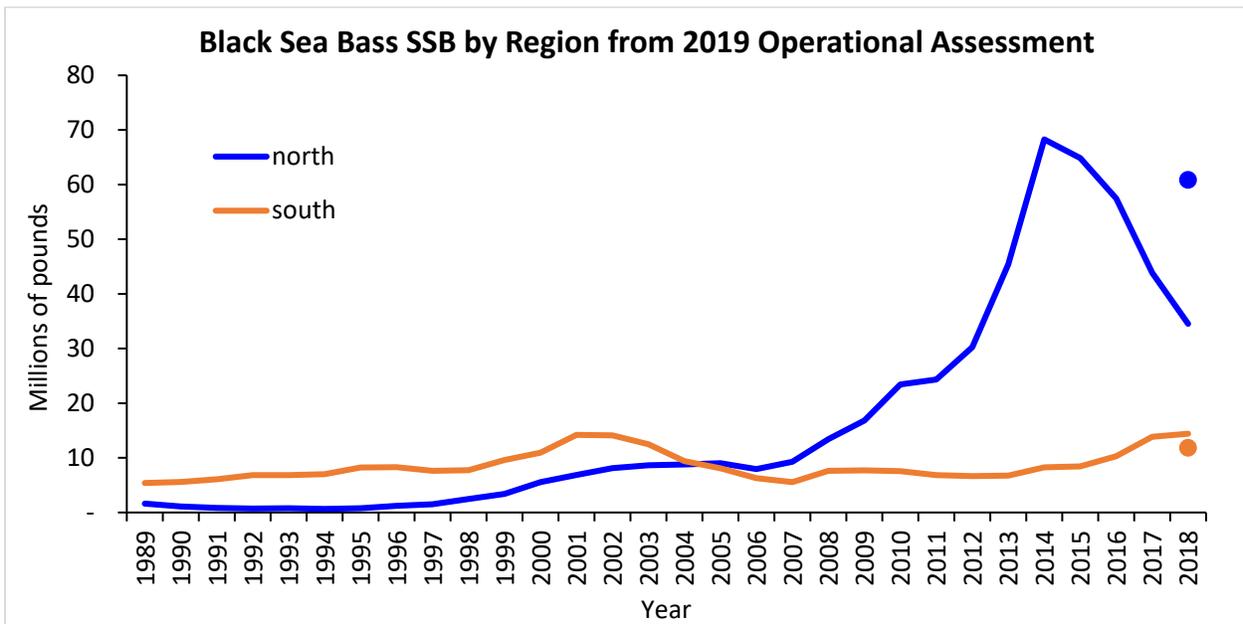


Figure 1. Black sea bass spawning stock biomass by region from the 2019 Operational Assessment Update. Open marks represent retro-adjusted values (used to set catch limits). Source: Personal communication with Northeast Fishery Science Center.

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2.2 Background

The Commission's FMP for black sea bass was approved in October 1996. The Council added black sea bass to their summer flounder FMP in 1996 through Amendment 9. Both FMPs established an annual process of developing commercial quotas, recreational harvest limits, and recreational and commercial management measures, as well as a series of permitting and reporting requirements. Under the original FMP, the annual coastwide commercial quota was divided into four quarters: January 1 through March 31, April 1 through June 30, July 1 through September 30, and October 1 through December 31.

Under the quarterly quota allocation system, the fishery was subjected to lengthy closures and some significant quota overages. Fishery closures occurring as a result of quotas being fully utilized or exceeded resulted in increased discards of legal sized black sea bass in mixed species fisheries for the remainder of the closure period. Significant financial hardship on the part of the fishing industry also resulted from a decrease in market demand caused by a fluctuating supply. To address these issues, the Management Board enacted a series of emergency rules in 2001 establishing initial possession limits, triggers, and adjusted possession limits. While these measures helped reduce the length of fishery closures, the frequent regulatory changes confused fishermen and added significant administrative burden to the states. Addendum VI (2002) provided a mechanism for setting initial possession limits, triggers, and adjusted possession limits during the annual specification setting process without the need for further emergency rules.

The quarterly quota system was replaced with an annual quota system under Amendment 13, approved by the Commission and Council in May 2002. The Amendment implemented a federal coastwide commercial quota, and a state-by-state allocation system for 2003 and 2004 to be managed by the Commission. This system was adopted to reduce fishery closures, achieve more equitable distribution of quota to fishermen, and allow the states to manage their commercial quota for the greatest benefit of the industry in their state.

At the time of final action on Amendment 13, the Council expressed a desire that the state allocations be managed at both the state and federal levels and contained in both the Council and Commission's FMPs. However, the NOAA Fisheries Regional Administrator at the time said a state quota system at the federal level could not be monitored effectively with the then current monitoring methods due to the anticipated low allocations in some states. As a result, the Council approved a federal annual coastwide quota, acknowledging that this would facilitate the use of state allocations through the Commission's FMP. Many of the concerns with monitoring state quotas at the federal level have subsequently been resolved with changes to how commercial landings are reported.

State-specific shares were adopted as follows: Maine and New Hampshire 0.5%, Connecticut 1%, Delaware 5%, New York 7%, Rhode Island, North Carolina and Maryland 11%, Massachusetts 13%, New Jersey and Virginia 20% (Table 1).

The individual state shares management program was continued in 2005 and 2006 through Addendum XII (2004). Addendum XIX, approved in 2007, extended the state shares of the commercial black sea bass quota indefinitely. No further changes have been made to the black sea bass commercial state shares. Addenda XII and XIX (2004 and 2007, respectively) allowed

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for the transfer of black sea bass commercial quota among states, and Addendum XX (2009) established the process for state to state quota transfers. Under the management program established through these Addenda, states have the responsibility of managing their quota to provide the greatest benefit to their commercial black sea bass industry. The ability to transfer or combine quota further increased the flexibility of the system to respond to annual variations in fishing practices or landings patterns.

In response to some states' concerns about changing resource availability and associated fishery impacts, the Board formed a Commercial Black Sea Bass Working Group in August 2018 to identify management issues related to changes in stock distribution and abundance, and propose potential management strategies for Board consideration. In February 2019, the Board reviewed the Working Group report. The key issue the Working Group identified is that the state commercial allocations implemented in 2003 do not reflect the current distribution of the resource, which has expanded significantly north of Hudson Canyon. The Board then requested the Plan Development Team (PDT) perform additional analyses and further develop proposed management options related to the issue of state commercial allocations. After reviewing the PDT report, in October 2019 the Board initiated Draft Addendum XXXIII to consider changes to the black sea bass commercial state allocations. In December 2019, the Council initiated a complementary amendment to consider including the state shares in the Council FMP.

Table 1. State shares of Black Sea Bass as allocated by Addendum XIX to Amendment 13.

State	Percent of Coastwide Quota
Maine	0.5 %
New Hampshire	0.5 %
Massachusetts	13 %
Rhode Island	11 %
Connecticut	1 %
New York	7 %
New Jersey	20 %
Delaware	5 %
Maryland	11 %
Virginia	20 %
North Carolina	11 %

2.3 Status of the Stock

The most recent stock status information comes from the 2019 operational stock assessment, which was peer-reviewed in August 2019 and approved for management use in October 2019 (NEFSC 2019). The assessment indicated that the black sea bass stock north of Cape Hatteras, North Carolina was not overfished and overfishing was not occurring in 2018, the terminal year of data used in the assessment.

The operational stock assessment updated the Age Structured Assessment Program (ASAP) models used in the 2016 benchmark stock assessment with commercial and recreational catch

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data, research survey and fishery-dependent indices of abundance, and analyses of those data through 2018³. For modeling purposes, the stock was partitioned into two sub-units divided approximately at Hudson Canyon to account for spatial differences in abundance and size at age. The sub-units are not considered separate stocks. Although the stock was assessed by sub-unit, the combined results were used to develop reference points, determine stock status, and recommend fishery specifications.

Spawning stock biomass (SSB), which includes both mature male and female biomass, averaged around 8 million pounds during the late 1980s and early 1990s and then steadily increased from 1997 to 2002 when it reached 22.2 million pounds. From 2007 to 2014, SSB dramatically increased, reaching a peak in 2014 at 76.5 million pounds; since 2014 SSB has trended back down. After adjusting for retrospective error in the model, SSB in the terminal year (2018) is estimated at 73.6 million pounds, approximately 2.4 times the target SSB reference point (SSB_{MSY} proxy= $SSB_{40\%}$ = 31.1 million pounds) (Figure 2). The (similarly adjusted) fishing mortality rate (F) in 2018 was 0.42, about 91% of the fishing mortality threshold reference point (F_{MSY} proxy= $F_{40\%}$) of 0.46. Except for 2017, F has been below the F_{MSY} proxy for the last five years. Average recruitment of black sea bass from 1989 to 2018 was 36 million fish at age 1. The 2011 year class was estimated to be the largest in the time series at 144.7 million fish and the 2015 year class was the second largest at 79.2 million fish. Recruitment of the 2017 year class as age 1 in 2018 was estimated at 16.0 million, well below the time series average.

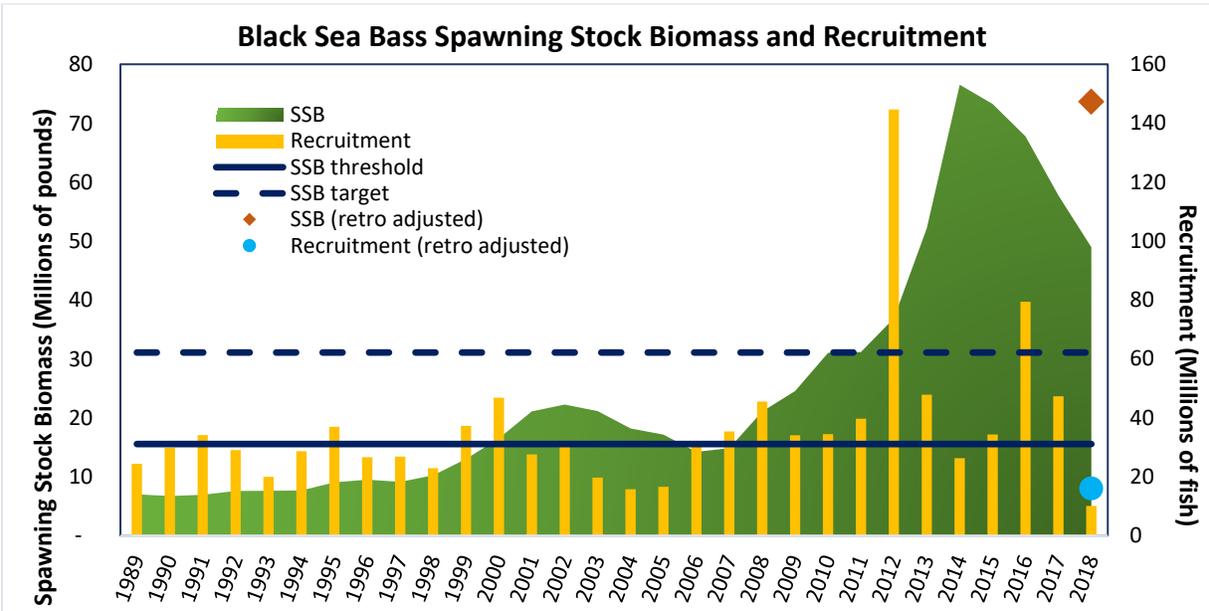


Figure 2. Black sea bass spawning stock biomass and recruitment. Source: 2019 Operational Assessment Prepublication Report, Northeast Fishery Science Center.

³ In July 2018, the Marine Recreational Information Program (MRIP) replaced the existing estimates of recreational catch with a calibrated 1981-2017 time series that corresponds to new survey methods that were fully implemented in 2018. The new calibrated recreational estimates are significantly higher than previous estimates, especially in later years of the time series. These revised data were incorporated into the 2019 operational stock assessment. This change was one of multiple factors which impacted the understanding of overall biomass levels.

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2.4 Status of the Fishery

The following information is based on commercial fishery dealer data (landings), the most recent stock assessment (discards), federal vessel trip reports (gear types and area of catch), and input from a small sample of fishermen and dealers. Input was provided by 6 individuals who primarily identify as fishermen and 4 individuals who represent two commercial fish dealers. Collectively, these 10 individuals are from 5 states and use three different gear types (i.e., bottom otter trawl, pot/trap, and hand line). Their input is not intended to be a representative sample of the commercial black sea bass fishery as a whole, but was solicited to provide context to trends shown in the data and document relevant information not captured in the available data.

Commercial landings have been constrained by a coastwide (i.e., Maine through Cape Hatteras, North Carolina) commercial quota since 1998, and state allocations were introduced in 2003. From 1998 to 2019, coastwide landings have closely followed quotas, ranging from a low of 1.16 million pounds in 2009 to a high of 3.98 million pounds in 2017. State landings have also closely followed quotas since they were implemented in 2003. A process for interstate quota transfers was established in 2009, but until 2017 states were highly constrained by low quotas and thus there was not much opportunity for transfers. Under higher quotas more interstate transfers have occurred; in the last three years, the states of Massachusetts through New Jersey have all received quota transfers from other states to prevent or mitigate overages of their state quotas. Since the coastwide quota was implemented in 1998, on average commercial discards have constituted 17% of total commercial removals. Over the last five years of the time series (2014-2018) discards were generally higher, averaging 33% of total commercial removals; discards in recent years have likely been influenced by high availability coupled with quota and minimum fish size limitations.

The average price per pound paid to fishermen by dealers for black sea bass (adjusted to 2019 values based on the Gross Domestic Product Price Deflator) appears to show an inverse relationship with landings in the southern region states (New Jersey - North Carolina) during 2010-2019 (i.e., price generally decreased with increases in landings, $p=0.002$). There did not appear to be a strong relationship between price and landings in the northern region (Maine - New York) during 2010-2019 ($p=0.498$, Figure 3). Some fishermen and dealers said temporary price drops can occur at both local and regional levels due to increases in the coastwide quota, state-specific seasonal openings, or individual trawl trips with high landings, all of which can be interrelated. They note that these sudden price drops are often temporary and the price usually rises again. This is evident in the coastwide relationship between average price per pound and the coastwide quota, which increased by 52% mid-year in 2017 and then decreased by 15% from 2017 to 2018. The average coastwide price per pound dropped from \$3.92 in 2016 to \$3.49 in 2017, but increased to \$3.82 in 2018 (all prices are adjusted to 2019 values based on the Gross Domestic Product Price Deflator).

Input from fishermen and federal vessel trip report data from 2009-2019 suggest that in years with higher quotas, bottom trawl gear accounted for a greater proportion and pots/traps accounted for a smaller proportion of total commercial landings compared to years with lower quotas. For example, the lowest quotas during 2010-2019 occurred in 2010-2012. During those years, bottom trawl gear accounted for around 39-41% of total commercial black sea bass

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landings (depending on the year) and pots/traps accounted for about 33-36%. In comparison, the highest quotas occurred in 2016-2019, during which around 52-61% of total commercial black sea bass landings could be attributed to bottom trawl gear and around 21-26% to pot/trap gear. Some fishermen have said trawlers are better able to take advantage of increases in quota as they can land higher volumes than vessels using pot/trap gear. This can be especially beneficial when the price of black sea bass drops (usually temporarily) in response to sudden increases of fish on the market.

According to commercial dealer data for 2010-2019, the average coastwide ex-vessel price per pound for black sea bass caught with bottom trawl gear was \$3.90 (adjusted to 2019 values), 6% greater than the average price for black sea bass caught with pots/traps (\$3.70). However, some fishermen report that they can get higher prices for black sea bass caught with pots/traps as they can market their fish as fresher and better quality than trawl-caught fish. Pot/trap and hook and line commercial fishermen in some states also sell black sea bass to live markets, which offer even higher prices. Some fishermen and dealers say size has a greater impact on price than gear, though the two are interrelated as fishermen using bottom trawl gear tend to land larger black sea bass than those using pots/traps.

The states have taken different approaches to managing their commercial black sea bass fisheries. Delaware, Maryland, and Virginia use Individual Transferable Quota (ITQ) systems, while other states utilize different combinations of quota periods, closed seasons, and initial or adjustable trip and possession limits to prevent quota overages⁴. For some states like Connecticut, quota availability and resulting management measures are highly dependent on quota transfers from other states. Some fishermen and dealers say they take these differences in state management measures into account when deciding when to fish, where to sell fish, and what price to offer for fish. For example, the price offered by local dealers may be higher when neighboring states are closed. Alternatively, some fishermen and dealers in comparatively low allocation states say they generally do not make business decisions based on black sea bass. Due to the low allocations in some states, black sea bass provides supplemental income for these fishermen and dealers, but is not a primary target species. For these reasons, the economic impacts of changes to state quotas can vary in part based on how states adjust their management measures in response to quota changes. For example, an increase in the possession limit could have different impacts than an extension of the open season. ITQ fishermen may be impacted differently than non-ITQ fishermen, and impacts may vary between gear types.

From 2010-2017, the commercial black sea bass landings from Maine through North Carolina which were caught in the northern region (as defined in the stock assessment, corresponding to approximately Hudson Canyon and north) increased steadily, with the greatest increases occurring during 2015-2017. After 2017, the proportion caught in the northern region declined, but remained much higher than the proportion from the southern region. During 2010-2019, the amount of commercial black sea bass landings caught in the southern region did not vary greatly (Figure 4).

⁴ Additional information on state quota management systems can be made available upon request.

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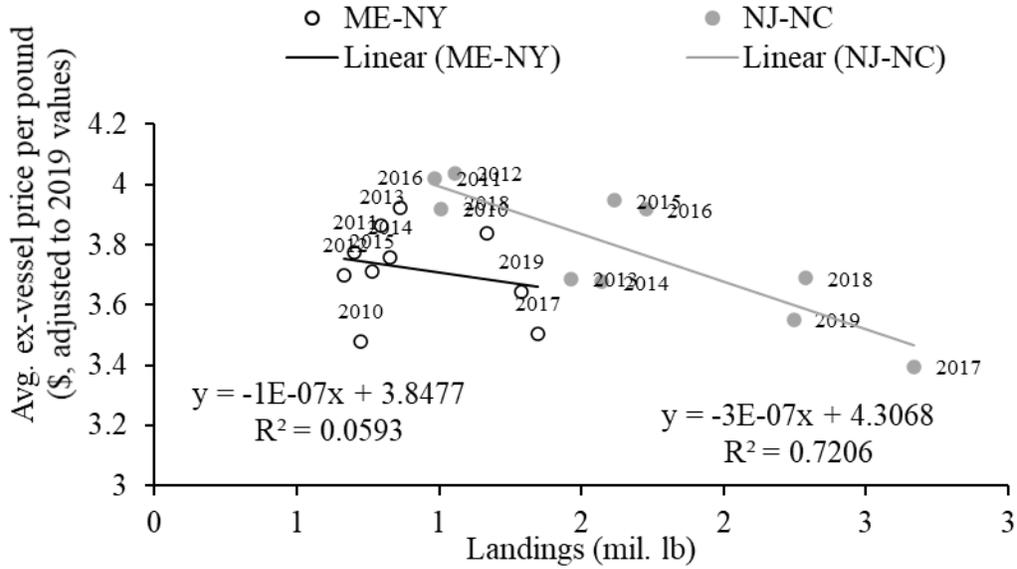


Figure 3. Average annual ex-vessel price per pound for black sea bass compared to annual black sea bass commercial landings by region (ME-NY and NJ-NC), 2010-2019, with associated linear relationship. Prices are adjusted to 2019 values based on the Gross Domestic Product Price Deflator. Data source: dealer data (CFDERS, provided by the NOAA Fisheries Greater Atlantic Regional Fisheries Office Analysis and Program Support Division).

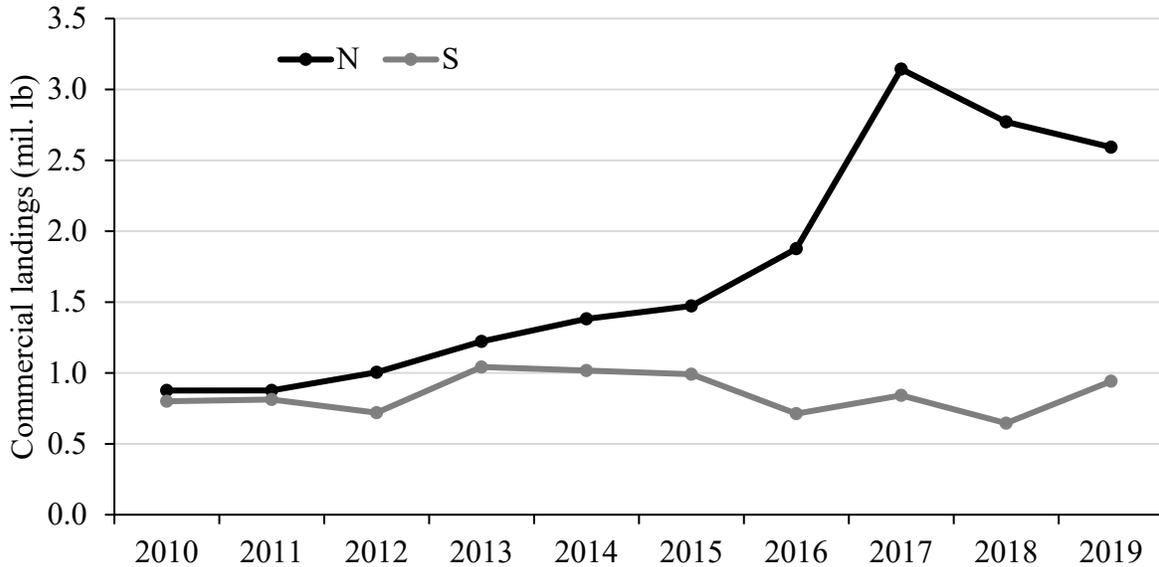


Figure 4. Total commercial black sea bass landings, 2010-2019, Maine through North Carolina, by region of catch location (North or South). Region is assigned based on statistical area of catch using the delineation defined in the stock assessment. Landings with an unknown statistical area were assigned to region based on the state of landing. Data source: dealer AA tables provided by the Northeast Fisheries Science Center

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3.0 Proposed Management Program

The Board is seeking public comment on each of the options included in the Draft Addendum. A flowchart of all management options for modifying the commercial state allocations is found in Appendix 1. Note that the options listed in Section 3.2 would result in changes to the Council's FMP and the federal regulations, but not the Commission's FMP.

3.1 Management Options for Commercial State Allocations

A. Status Quo (Current Commercial State Allocations)

This option would maintain the current state allocation percentages (Table 1).

B. Increase Connecticut Quota to 5%

Note: This option is proposed for consideration before, or in addition to any of the following allocation options. It could also be selected as a standalone option if no other changes are desired. If this option is selected, the base allocations under any other option will be equal to the % New Allocations shown in Table 2.

This option would increase Connecticut's 1% allocation of the coastal quota to 5%. Connecticut has experienced a substantial increase in abundance of black sea bass in state waters over the last seven years (see Figure 5), though the state's 1% allocation has remained unchanged. This option attempts to reduce the disparity between the abundance of black sea bass in Connecticut waters and Connecticut's quota allocation by increasing Connecticut's allocation to 5%, using the following approach:

- 1) Hold New York and Delaware allocations constant. New York has experienced a similar substantial increase in black sea bass abundance in state waters; therefore, a reduction to the New York allocation is not proposed. Delaware's current allocation is 5%. This option does not seek to make Connecticut's percent allocation larger than any other state.
- 2) Move half of Maine and New Hampshire quotas to Connecticut. Since 2012, neither Maine nor New Hampshire has reported commercial black sea bass landings, and neither state currently has declared an interest in the fishery.
- 3) Move some allocation from Massachusetts, Rhode Island, New Jersey, Maryland, Virginia, and North Carolina to Connecticut; the amount moved from each state would be proportional to that state's current percent allocation.

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Table 2. Proposed changes in state allocations.

State	Current % Allocation	Change in % Allocation	New % Allocation
ME	0.5%	-0.25%	0.25%
NH	0.5%	-0.25%	0.25%
MA	13.0%	-0.53%	12.47%
RI	11.0%	-0.45%	10.55%
CT	1.0%	4.00%	5.00%
NY	7.0%	0.00%	7.00%
NJ	20.0%	-0.81%	19.19%
DE	5.0%	0.00%	5.00%
MD	11.0%	-0.45%	10.55%
VA	20.0%	-0.81%	19.19%
NC	11.0%	-0.45%	10.55%

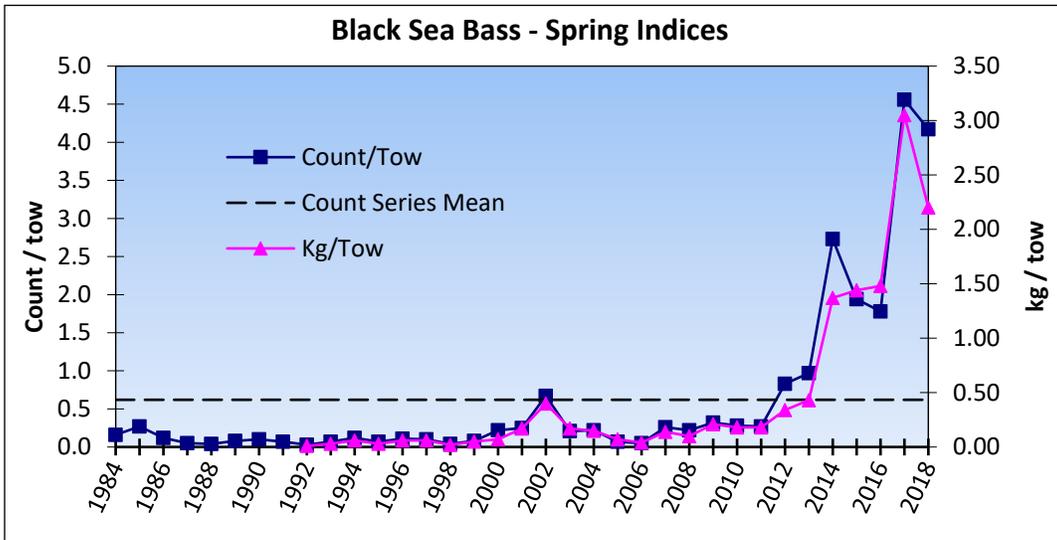


Figure 5. Connecticut Long Island Sound Trawl Survey Spring Black Sea Bass Index

C. Dynamic Adjustments to Regional Allocations

The Dynamic Adjustments to Regional Allocations approach (DARA approach) is a formulaic method that aims to balance fishery stability and responsiveness to the changing distribution of the stock. State allocations would be gradually adjusted based on regional shifts in biomass distribution. Stock distribution (defined as proportion of exploitable biomass by assessment sub-area) would be derived from updated stock

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assessments or surveys⁵. This approach recognizes traditional involvement and investment in the development of the fishery, and addresses the changing distribution of the stock and the resulting effects within the fishery.

There are two phases to the DARA approach. The first is the transition phase, during which the initial allocations (either the current allocations, or allocations modified through option B) are gradually adjusted to allocations partially based on distribution of the stock. During this phase, the state allocations become less dependent on the initial allocations and more dependent on regional stock distribution.

After the transition phase is complete, the relative importance of the initial allocations and current stock distribution in determining the allocations would be fixed, but allocations would continue to be adjusted when updated stock distribution information becomes available. The DARA approach proposes use of the 2019 operational stock assessment results (NEFSC, 2019) and additional stock assessments thereafter to determine the values for regional stock distribution⁶. Taking into account the initial allocations and regional stock distribution, the two components are integrated to produce dynamic regional allocation shares, which are then subdivided into state-specific allocations. The formulas for calculating regional and state shares can be found in Appendix 2.

As described below, there are various sub-options to set the scale and pace of the change in allocations. Appendix 2 includes a complete description of the method and examples of the DARA approach retrospectively applied to recent years. If this option is selected, a regional configuration would also need to be selected under option set G.

Sub-options for Dynamic Adjustments to Regional Allocations Approach

The DARA approach affords considerable flexibility, with regard to both the initial configuration and application of the allocation formula over time. The overall approach can be modified in various ways to achieve different results. Below are descriptions and proposed sub-options for each adjustable component of the approach. Note that the sub-options for each component represent the minimum and maximum bounds on the range of options; the Board could select an alternative configuration within this range.

1. Final relative importance of initial allocations versus resource distribution

The sub-options below determine the final relative importance of the initial allocations compared to stock distribution at the end of the transition phase. Before the transition begins (year 0), the allocations are 100% based on the initial allocations, and 0% based on stock distribution. The weights assigned to initial allocations and stock distribution

⁵ This option is modeled after the Transboundary Management Guidance Committee (TMGC) approach, which was developed and used for the management of Georges Bank resources shared by the United States and Canada (TMGC, 2002).

⁶ The Board may specify alternative information (e.g. NEFSC Trawl Survey) to be used in the case that future assessments cannot provide information on regional stock distribution.

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must always sum to 100%; therefore, if the final weight of the initial allocations is 10%, the final weight of the resource distribution factor is 90%. As the final weight of the distribution factor increases, the weight of the initial allocations decreases, and the regional allocations resulting from the DARA approach become more dependent on the spatial distribution of black sea bass biomass, and less dependent on the initial allocations.

- **Sub-option C1-A:** Under this option, at the end of the transition phase allocations are based 90% on stock distribution and 10% on the initial allocations.
- **Sub-option C1-B:** Under this option, at the end of the transition phase allocations are based 50% on stock distribution and 50% on the initial allocations.

2. Change in relative weights of each factor per adjustment

The transition to allocations based partially on historical allocations and partially on resource distribution would occur through incremental adjustments to the relative importance of each factor. These sub-options would determine how much the relative weights of the initial allocations and stock distribution factors would change with each adjustment. Larger adjustments could potentially result in a faster transition away from the initial allocations (see above). Smaller adjustments would likely result in a slower transition. Adjustments to the relative weights of each factor also have the potential to impact the regional allocations during the transition; smaller changes to the weights would likely produce smaller changes in the regional allocations during each adjustment.

- **Sub-option C2-A:** Under this option the relative weights of each factor (initial allocations and stock distribution) would change by 5% per adjustment. For example, in the first adjustment, the respective weights assigned to the initial allocations and stock distribution would change from 100%/0% to 95%/5%. This would result in a slower transition to the final weighting scheme, and a slower change in the allocations compared to sub-option C2-B.
- **Sub-option C2-B:** Under this option the relative weights of each factor (initial allocations and stock distribution) would change by 20% per adjustment. For example, in the first adjustment, the respective weights assigned to the initial allocations and stock distribution would change from 100%/0% to 80%/20%. This would result in a faster transition to the final weighting scheme and a faster change in the allocations compared to sub-option C2-A.

3. Frequency of weight adjustments

These sub-options determine how often the weights assigned to each factor (initial allocations and stock distribution) would be adjusted during the transition phase. More frequent adjustments to the weights will result in a faster transition to the final weighting scheme. Note that each time an adjustment is made to the weights, it would

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likely result in a change to the allocations, even if the distribution information remains unchanged.

- **Sub-option C3-A:** Under this option adjustments to the weights assigned to the initial allocations and stock distribution would occur every year. This would result in a faster transition from the initial weights to the final weights. It could also result in yearly changes in the allocations, even if stock distribution information remains unchanged.
- **Sub-option C3-B:** Under this option adjustments to the weights assigned to the initial allocations and stock distribution would occur every other year. This would result in a slower transition from the initial weights to the final weights. It could also result in changes to the allocations every other year, even if stock distribution information remains unchanged.

4. Regional allocation adjustment cap

These sub-options would establish a cap for the maximum percent by which the regional allocations could change at one time. A lower % cap would result in smaller incremental changes to the allocations, and could increase the total duration of the transition phase.

- **Sub-option C4-A:** This option would cap the change in regional allocations at a maximum of 3% per adjustment.
- **Sub-option C4-C:** This option would cap the change in regional allocations at a maximum of 10% per adjustment.
- **Sub-option C4-D:** Under this option there would be no cap to the change in regional allocations per adjustment. This means the regional allocations would change according to the formula based only on changes in the weights assigned to the initial allocations and stock distribution and any changes in resource distribution values.

D. Trigger Approach

Using a trigger-based approach, a minimum level of coastwide quota would be established as a trigger for a change in allocations to the states. If the coastwide quota in a given year were higher than the established quota trigger value, then the coastwide quota would be distributed to the states in two steps: 1) the amount of coastwide quota up to and including the trigger would be distributed to the states according to “base allocations” (dependent on Option B, and sub-option set D4); and 2) the amount of quota in excess of the established trigger amount, hereafter referred to as the surplus quota, would be distributed using a different allocation scheme. This method somewhat reduces fishery disruption or instability by allowing changes to state allocations only when the coastwide quota exceeds a predetermined amount.

Trigger Approach Sub-options

Below are all sets of sub-options for configuration of the trigger approach. The first set of sub-options relates to the established trigger value (sub-options D1-A and D1-B). The second set relates to how surplus quota above the trigger would be distributed among

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the states (sub-options D2-A, and D2-B). The third and fourth sub-option sets are only applicable if option D2-B is selected, and would establish how surplus quota would be distributed within a region, and whether base allocations would remain the same each year or change over time. Examples of several trigger approach configurations are provided in examples 1-6 in Appendix 3.

1. Trigger value

Note that the Board and Council could select an alternative value within the range of sub-options below.

- **Sub-option D1-A: Trigger value of 3 million pounds**
A 3 million pound trigger represents approximately the average coastwide commercial quota from 2003 through 2018, excluding years in which specifications were set using a constant catch approach (Figure 6).
- **Sub-option D1-B: Trigger value of 4.5 million pounds**
A 4.5 million pound trigger was selected by the Board as the maximum trigger level for consideration under this approach. It is greater than all quotas implemented prior to 2020 (i.e., maximum quota of 4.12 million pounds in 2017), but lower than the 2020 quota of 5.58 million pounds (Figure 6).

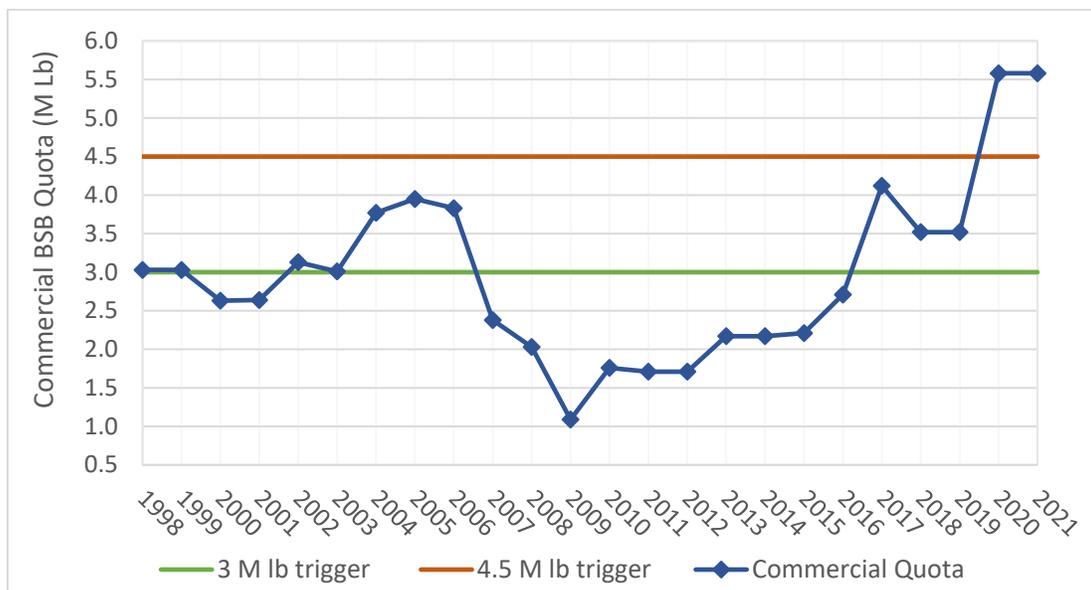


Figure 6. Black sea bass commercial quotas over time compared to 3 million, 4 million and 4.5 million pound triggers. Note that the Board and Council may recommend revisions to the 2021 quota during their August 2020 meeting.

2. Distribution of surplus quota

- **Sub-option D2-A: Even distribution of surplus quota**
If the coastwide quota in a given year is higher than the trigger, then the surplus quota would be distributed equally to the states of Massachusetts through North Carolina. Maine and New Hampshire would each receive 1% of the surplus, based on their historically low participation in the fishery. Should the annual

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coastwide quota be less than or equal to the established quota trigger, allocation percentages would default to the base allocations.

- **Sub-option D2-B: Distribution of surplus quota based on regional biomass from stock assessment**

This sub-option attempts to address the goal statement of this action by incorporating the regional biomass distribution. If the coastwide quota in a given year were higher than the trigger, then the surplus quota would first be allocated to each region based on regional biomass proportions from the stock assessment, and then the regional quotas would be distributed to the states within each region. A method for distributing quota to states within each region would be specified by selecting sub-option D3-A or D3-B. If this option is selected, a regional configuration would also need to be selected under option set G.

3. Distribution of regional surplus quota to states within a region (only applicable if Sub-option D2-B is selected)

- **Sub-option D3-A: Even distribution of regional surplus quota**

Regional surplus quota would be distributed to the states within each region equally. ME and NH would each receive 1% of the northern region surplus quota. Examples of this allocation approach are provided in Appendix 3 (examples 3 and 5).

- **Sub-option D3-B: Proportional distribution of regional surplus quota**

Regional surplus quota would be distributed to the states within each region in proportion to their initial allocations (see sub-option set D4). ME and NH would each receive 1% of the northern region surplus quota.

4. Allowing base allocations to change over time (only applicable if Sub-option D2-B is selected).

- **Sub-option D4-A: Static base allocations**

Under, this sub-option, the quota up to and including the trigger amount would be allocated based on the initial base allocations every year (status quo, or the modified allocations proposed in Option B). Examples of this allocation approach are provided in Appendix 3 (examples 1-3).

- **Sub-option D4-B: Dynamic base allocations**

Under this option, the quota up to and including the trigger amount would be allocated according to the previous year's final state allocations. This sub-option has the potential to change allocations more quickly than the static base allocations sub-option. Examples of this allocation approach are provided in Appendix 3 (examples 4-6).

E. Trigger Approach with Increase to Connecticut and New York Quotas First

This option proposes a 3 million pound trigger (see previous section). Annually, the coastwide quota up to and including 3 million pounds would be distributed based on the initial allocations (Table 1). Surplus quota above 3 million pounds would first be used to

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increase Connecticut's allocation to 5% of the overall quota, and then to increase New York's allocation to 9% of the overall quota. Any remaining additional quota would be split between the regions according to the proportion of biomass in each region based on the most recent stock assessment information, and then allocated among the states within each region in proportion to the initial allocations. Examples of this option are provided in Appendix 3 (examples 7 and 7-B). If this option is selected, a regional configuration would also need to be selected under option set G.

F. Percentage of Coastwide Quota Distributed Based on Initial Allocations

This approach would allocate a fixed percentage of the annual coastwide quota using the initial allocations regardless of the coastwide quota level. Fluctuations in annual quota values would result in similar fluctuations in the number of pounds allocated using the initial allocations (equal to the status quo allocations, or the modified allocations proposed under Option B). For example, if the established percentage of quota to be distributed using the initial allocations is 50%, 2 million pounds of a 4 million pound coastwide quota would be distributed using the initial allocations. Unlike the trigger approach, this approach would still allow a portion of the quota to be allocated using a distribution other than the initial allocations even under lower coastwide quotas. The sub-options below establish how the remaining quota would be allocated to the states.

Percentage Approach Sub-options

Below are all sets of sub-options for configuration of the percentage approach. Examples of several percentage approach configurations are provided in Appendix 3 (examples 8-12).

1. Percentage of quota to be allocated using initial allocations

Note that the Board and Council could select an alternative value within the range of sub-options below.

- **Sub-option F1-A: 25%**

Under this sub-option, 25% of the annual coastwide quota would be allocated to the states using the initial allocations. Therefore, 75% of the coastwide quota would be allocated to the states according to the sub-options selected in the following sets.

- **Sub-option F1-B: 75%**

Under this sub-option, 75% of the annual coastwide quota would be allocated to the states using the initial allocations. Therefore, 25% of the coastwide quota would be allocated to the states according to the sub-options selected in the following sets.

2. Distribution of remaining quota

- **Sub-option F2-A: Even distribution of remaining quota**

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Remaining quota would be distributed equally to the states of Massachusetts through North Carolina. Maine and New Hampshire would each receive 1% of the remaining quota, based on their historically low participation in the fishery.

- **Sub-option F2-B: Distribution of remaining quota based on regional biomass from stock assessment**

Remaining quota would first be allocated to each region based on regional biomass proportions from the stock assessment, then regional quotas would be distributed to the states within each region. A method for distributing quota to states within each region would be specified by selecting sub-option F3-A or F3-B. If this option is selected, a regional configuration would also need to be selected under option set G.

3. Distribution of regional quota to states within a region

(Only applicable if Sub-option F2-B is selected)

- **Sub-option F3-A: Even distribution of regional quota**

Remaining quota would be distributed to the states within each region equally, except ME and NH would each receive 1% of the northern region quota.

- **Sub-option F3-B: Proportional distribution of regional quota**

Remaining quota would be distributed to the states within each region in proportion to their initial allocations, except ME and NH would each receive 1% of the northern region quota.

G. Regional Configuration Options

Options C through F consider changing the current state allocations to incorporate regional distribution information from the stock assessment. In order to apply a regional component to the allocations, it is necessary to establish a regional configuration. The following sub-options establish which states would be grouped together as regions for the purposes of allocating a combined regional quota which would then be distributed to the states in each region. Though neither state has declared an interest in the fishery, Maine and New Hampshire are included in the northern region and their allocations will be determined according to the allocation approach selected above.

- **Sub-option G1:** This option would establish two regions: 1) ME-NY, and 2) NJ-NC. These regions generally align with those used for the assessment, which used Hudson Canyon as the dividing line based on several pieces of evidence that stock dynamics have an important break in this area.
- **Sub-option G2:** This option would establish three regions: 1) ME-NY; 2) NJ; and 3) DE-NC. This option attempts to address the unique position of New Jersey by treating it as a separate region, as the state straddles the border between the northern and southern spatial sub-units at Hudson Canyon (Figure 7). Under this option, New Jersey's initial 20% allocation is treated as follows: 10% is considered to come from the northern region, and 10% from the southern region. As the regional allocations change, NJ's "northern" 10% of the coastwide quota will change according to the proportion of biomass in northern region, and

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the “southern” 10% will change according to the proportion of biomass in the southern region. NJ’s total allocation will be the sum of the northern and southern components of its allocation. This is consistent with the spatial distribution of black sea bass landings in recent years, which is roughly an even split between north and south of Hudson canyon (see Table 3 and Figure 8).

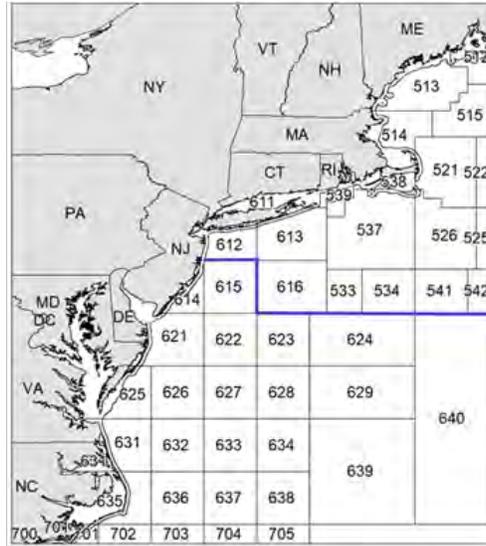


Figure 7. NMFS statistical areas showing the dividing line between the northern and southern regions as defined in the black sea bass stock assessment.

Table 3. Proportion of black sea bass commercial harvest landed in New Jersey from northern and southern region statistical areas. Only landings associated with valid northeast region statistical areas were included in the calculations. Data were provided by the ACCSP. Landings by area were estimated by applying VTR proportions of landings by area to dealer data.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average 2010- 2019	Average 2010- 2014	Average 2015- 2019
% North	38%	28%	47%	46%	54%	78%	65%	74%	58%	57%	54%	43%	66%
% South	62%	72%	53%	54%	46%	22%	35%	26%	42%	43%	46%	57%	34%

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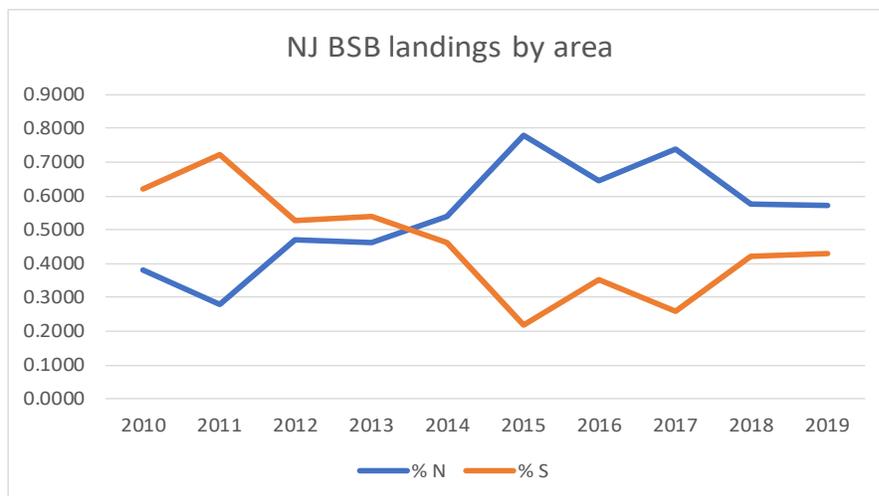


Figure 8. Proportion of black sea bass commercial harvest landed in New Jersey from northern and southern region statistical areas by year.

3.2 Management Options for Changes to Federal Regulations

The Council amendment will also consider 1) whether the state allocations should be added to the Council's FMP or if they should remain only in the Commission's FMP, 2) if added to the Council's FMP, should changes be made to the regulations regarding paybacks of state quota overages, and 3) whether to modify regulations regarding federal in-season closures. The following options relate to Council management and the federal regulations.

3.2.2 Options for adding state commercial allocations to the Council FMP

A. Status Quo (No action): Commercial state allocations included only in the Commission's FMP

Under this option, the black sea bass commercial state allocations would remain only in the Commission's FMP. Changes to these allocations would not require a joint action with the Council.

B. Commercial state allocations for black sea bass included in both Commission and Council FMPs

Under this option, the state allocations would be added to the Council's FMP. Future changes to the allocations would be considered through a joint action between the Commission and Council.

Including the state allocations in both FMPs would require NOAA Fisheries to monitor landings at the state level. Transfers of quota between states would continue to be allowed, but would be managed by NOAA Fisheries, rather than the Commission. It should be noted there are differences between the two bodies in how transfers are conducted. The Commission allows for transfers to occur at any time in the fishing season up to 45 days after the last day of the fishing season. Commission transfers are not limited. While NOAA Fisheries allows for late season quota transfers for other species, they are limited to unforeseeable late season events. Generally, the deadline

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for a state to submit routine transfer requests is the close of business on December 16. While the Commission allows for transfers at the end or after the fishing season to help states balance quota overages, NOAA Fisheries would likely not allow for such transfers unless the overage was unforeseen in the last two weeks of the fishery; the burden of proof would then be on the state to justify the transfer. Lastly, the Commission is able to approve and finalize transfers within a day or two of receiving the request, while quota transfers through NOAA Fisheries may take several weeks to be finalized.

If this option is selected, the following sub-options could modify the Council's FMP to establish how overages of state quotas are handled.

- **Sub-option B1: Paybacks only if coastwide quota is exceeded.** Under this option, states would only pay back overages of their allocations if the entire coastwide quota is exceeded. This is the current process for state-level quota overages under the Commission's FMP (Addendum XX). No other changes to the current commercial accountability measure regulations would be made.
- **Sub-option B2: States always pay back overages.** Under this option, the exact amount in pounds by which a state exceeds its allocation would be deducted from their allocation in a following year, regardless of if the coastwide quota was exceeded or not. All other aspects of the commercial accountability measures would remain unchanged.

3.2.2 Options for federal in-season closures

The Board and Council are considering three options related to in-season federal closures. The current regulations for in-season closures require the entire commercial fishery to close in-season for all federally permitted vessels and dealers, regardless of state, once the coastwide quota is projected to be landed. This has not occurred to date; however, concerns have been expressed about the potential for overages in some states to impact all states through in-season closures.

The following options specify when the commercial fishery would close in-season for all federal permit holders coastwide. Under all options below, individual states would close in-season if their allocations are reached prior to the end of the year, as is currently required under the Commission's FMP.

A. Status Quo (No action): coastwide federal in-season closure when landings are projected to exceed the coastwide quota

Under this option, the entire commercial fishery would close in-season for all federally permitted vessels and dealers, regardless of state, once the coastwide quota is projected to be landed, as is currently required under the Council's FMP.

B. Coastwide federal in-season closure when landings are projected to exceed the commercial quota plus a buffer of up to 5%

Under this option, the entire commercial fishery would close in-season for all federally permitted vessels and dealers, regardless of state, once landings exceed the coastwide quota plus an additional buffer of up to 5%. The Council and Board would agree to the appropriate buffer for the upcoming year through the specifications process. The intent

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behind allowing an additional buffer is to help minimize negative economic impacts of coastwide closures on states that have not fully harvested their allocations. This is not expected to create an incentive for quota overages as states would still be required to close when their state-specific quotas are reached and states would still be required to pay back quota overages (see sub-option set above).

C. Coastwide federal in-season closure when the commercial ACL is projected to be exceeded.

Under this option, the entire commercial fishery would close in-season for all federally permitted vessels and dealers, regardless of state, once the coastwide commercial ACL is projected to be landed, as opposed to when the quota is projected to be landed under the current regulations. Discards in weight cannot be monitored in-season using current discard estimation methods. Therefore, in practice, this option would require GARFO to make assumptions about discards in the current year.

4.0 Compliance

TBD

5.0 Literature Cited

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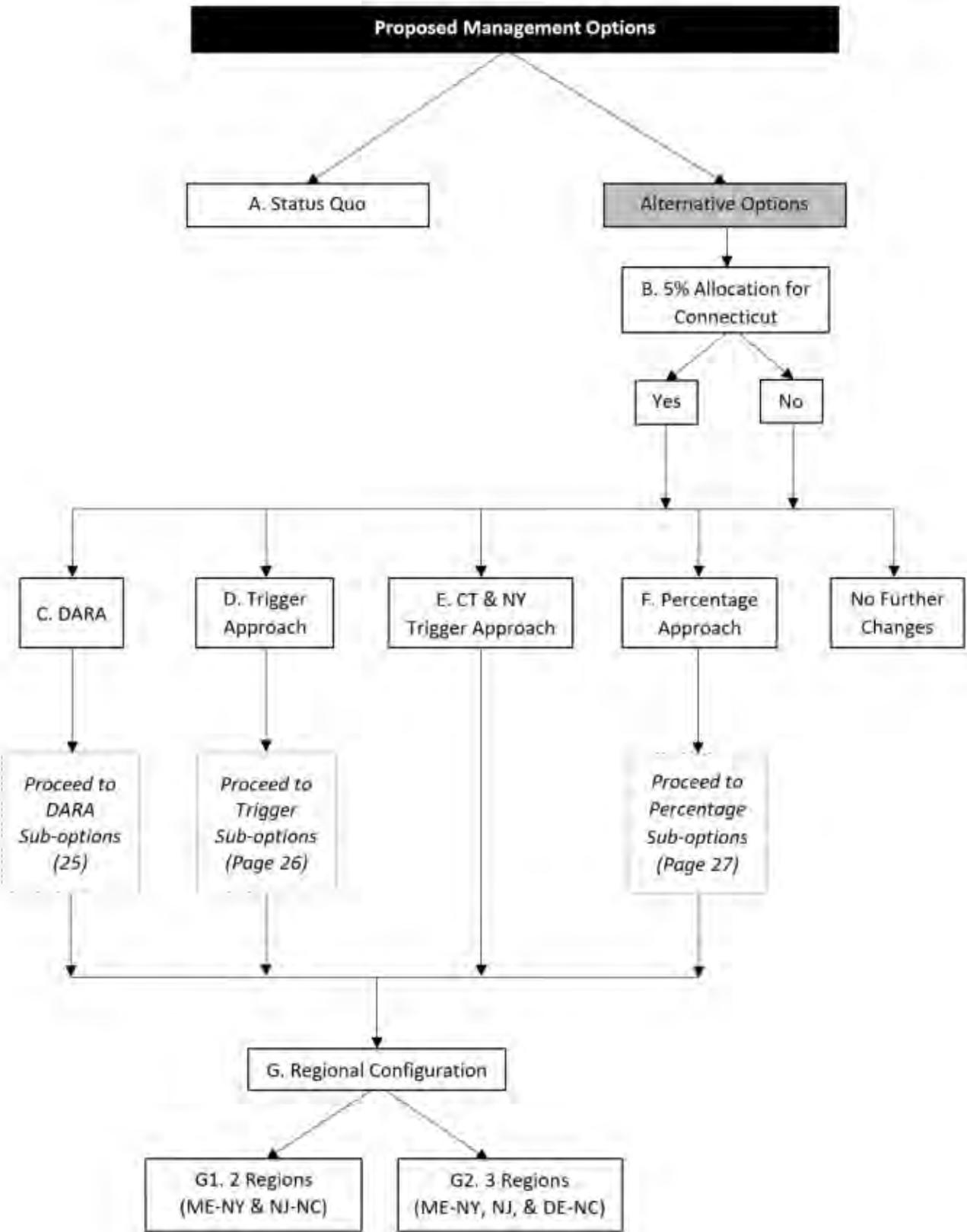
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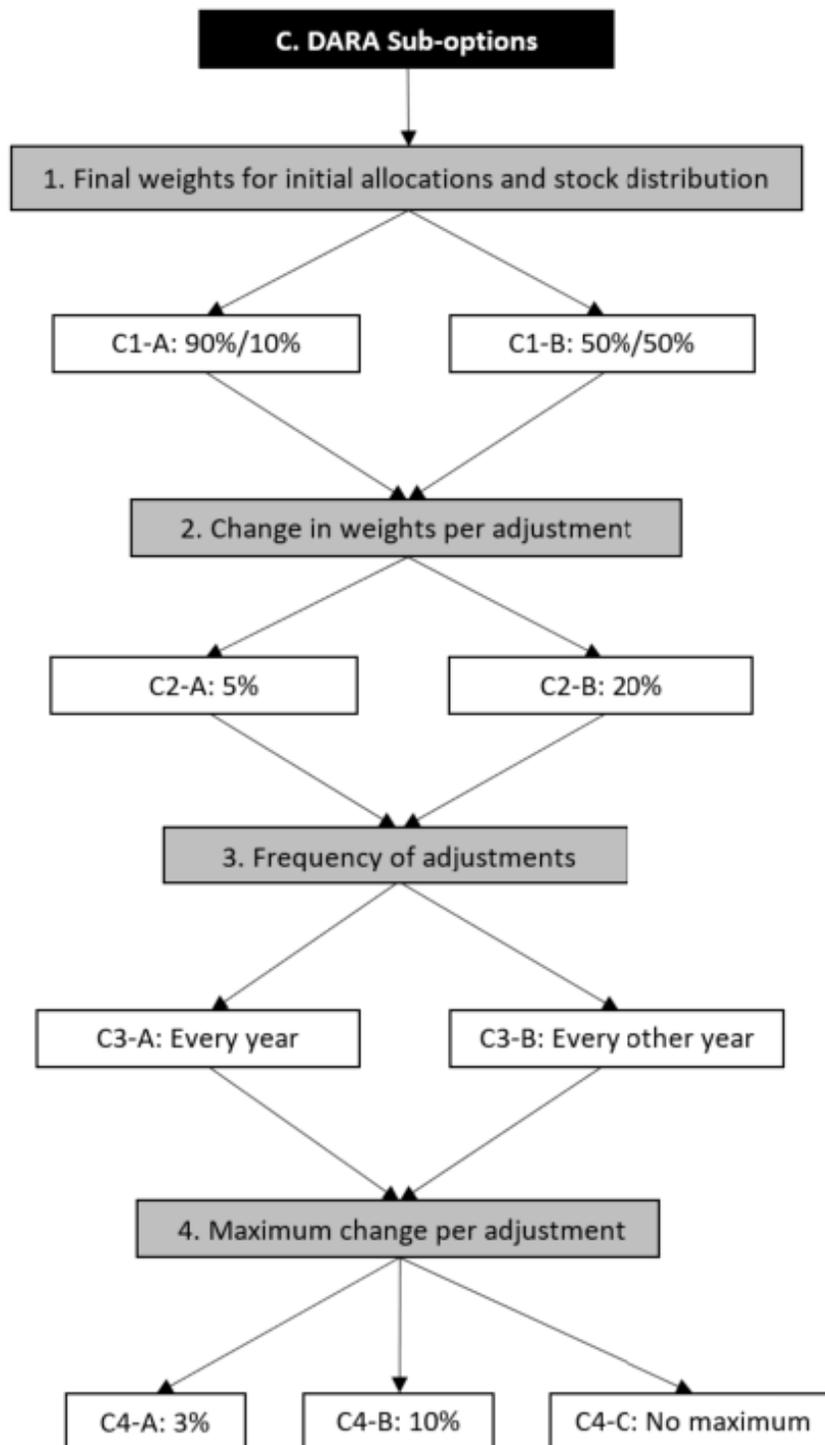
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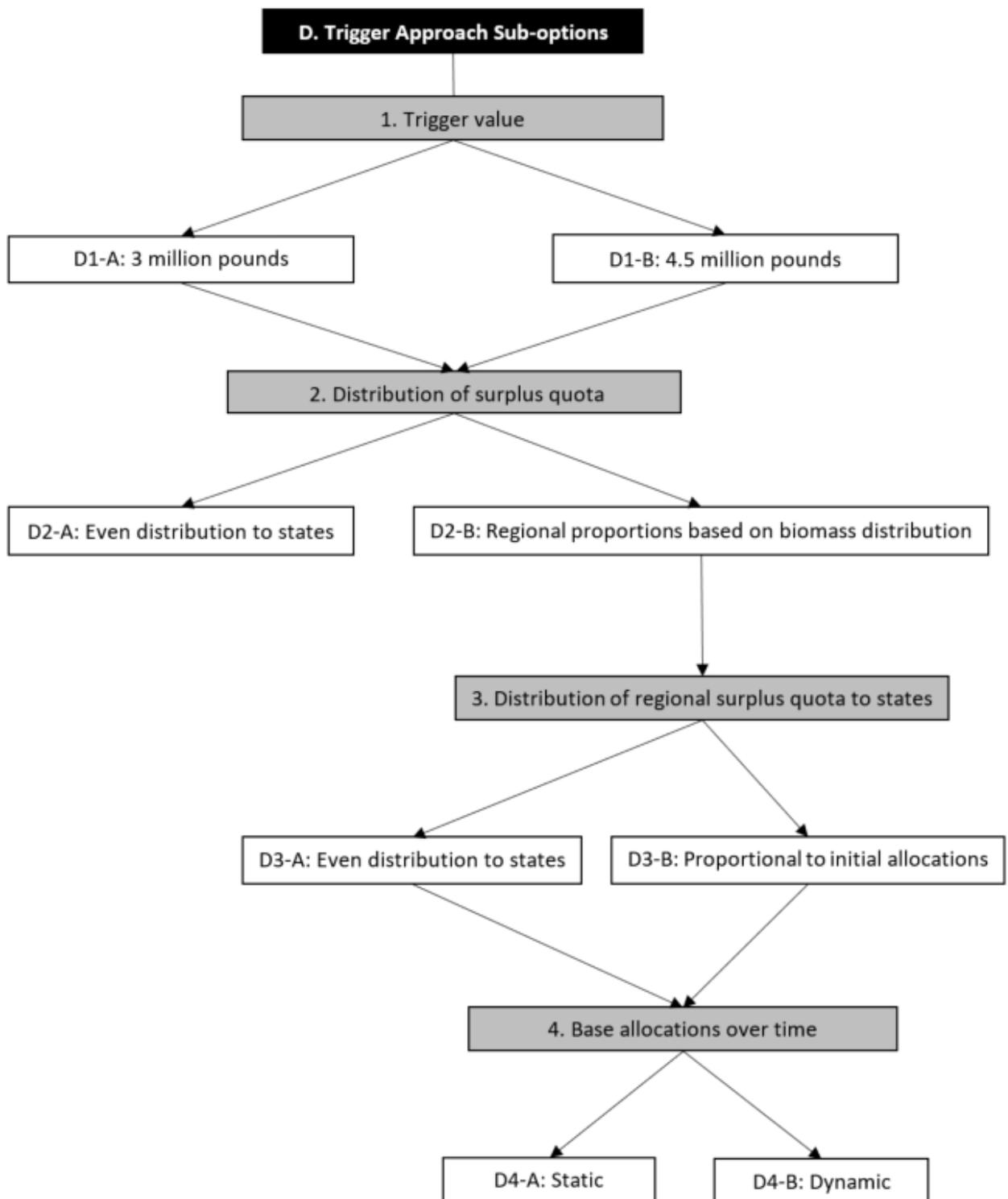
Appendix 1. Flowchart of Management Options for Commercial State Allocations



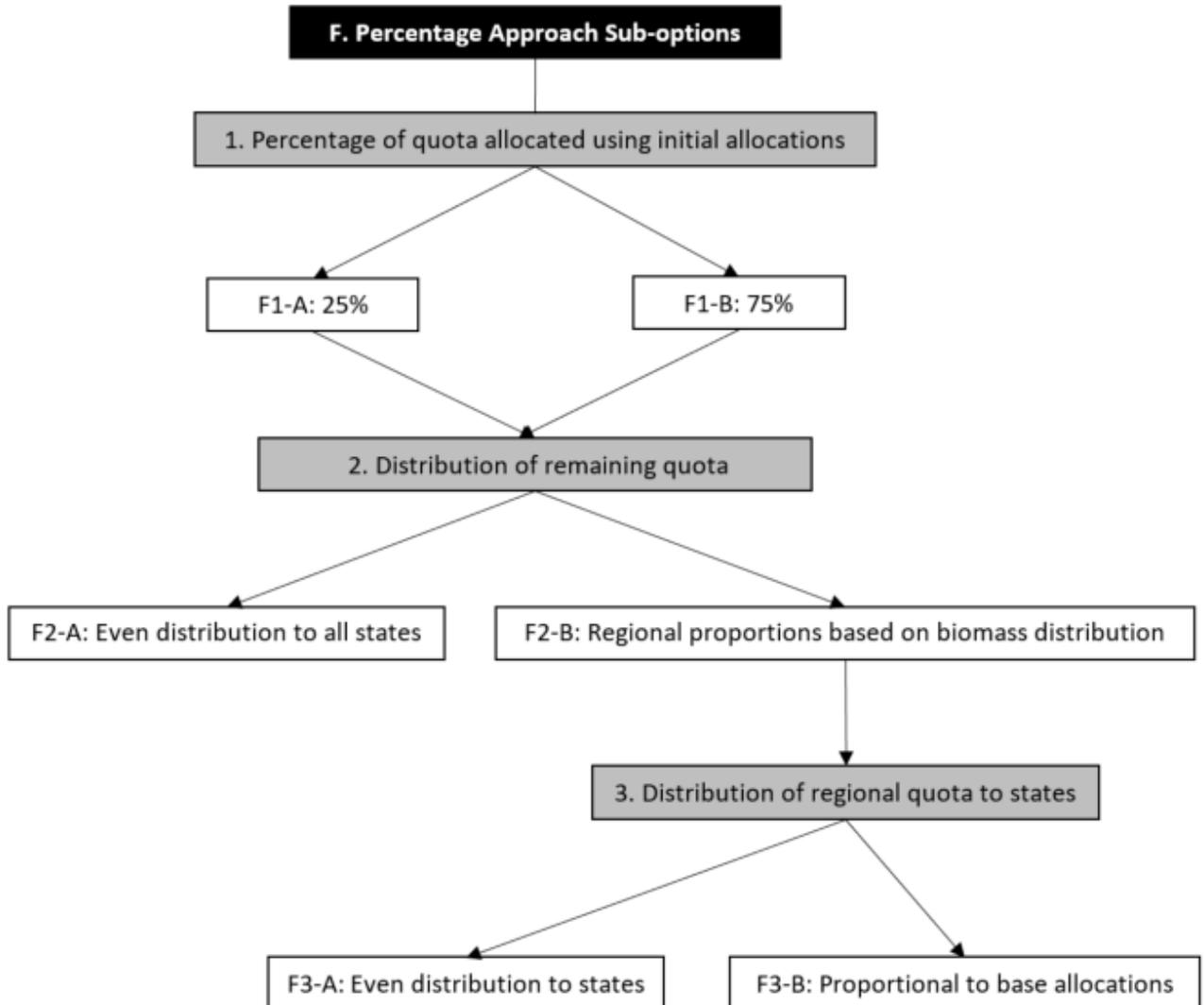
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Proposed New Allocation Alternative For Black Sea Bass: Dynamic Adjustment to Regional Allocations (DARA)

Black Sea Bass PDT

17 July 2020

Introduction

This proposal offers a new alternative for modifying the allocation of the commercial black sea bass quota. It involves a dynamic approach for gradually adjusting state-specific allocations using a combination of historical allocations and current levels of stock distribution. The alternative is modeled after the Transboundary Management Guidance Committee (TMGC) approach, which was developed and used for the management of shared Georges Bank resources between the United States and Canada.

As noted by Gulland (1980), the designation of units for management entails a compromise between the biological realities of stock structure and the practical convenience of analysis and policy making. For black sea bass, the Atlantic Coast states from North Carolina to Maine - acting through and by the MAFMC, ASMFC, and GARFO - use a single management unit encompassing the entire region occupied by the stock, from Cape Hatteras, North Carolina northward to the U.S.- Canadian border. While there is a general scientific consensus that the black sea bass population has shifted its center of biomass to the northern portion of its range (Bell et al. 2014 and NEFSC 2017), the current management structure, as reflected by current state-by-state allocations, does not recognize this new population dynamic.

This new alternative sets forth an approach that balances stability within the fishery, based on historical allocations, with gradual adjustments to the fishery, based on regional shifts in stock distribution emanating from updated stock assessments or surveys. The approach affords considerable flexibility, both with regard to initial configuration and application over time. A key feature involves the use of an algorithm to guard against abrupt shifts in allocations.

This new alternative draws upon established principles of resource sharing, which include consideration of access to resources occurring or produced in close spatial proximity to the states in the management unit and historical participation in the exploitation of the resources (Gavaris and Murawski 2004). The former has emerged from the changing distribution of the black sea bass resource and the effects this creates within the fishery. The latter recognizes traditional involvement and investment in the development of the fishery since the beginning of black sea bass joint management in 1996. Both principles were incorporated in the TMGC approach; historical participation was initially afforded primary emphasis, then gradually down-weighted so that, after a nine-year phase-in period, the annual allocation was based primarily on stock distribution (Murawski and Gavaris 2004). The approach proposed here for black sea bass is similar; the proposal envisions a gradual transition, giving more weight to historical participation at first, then slowly phasing in the distributional aspects over time, and then implements changes to state specific allocations through a two-step process.

Details for the calculations used for the TMGC approach were described by Murawski and Gavaris (2004). Modifications to that approach are necessary, given key differences between the shared Georges Bank resources and the shared black sea bass resource. Those differences include the state-by-state allocation system currently in place for black sea bass, the need to translate from regional to state-specific allocations, and the need to accommodate multiple jurisdictional differences in the fishery.

This new alternative proposes use of existing state-by-state allocations to reflect initial values for historical participation (aka initial allocations) and proposes use of the 2019 update stock assessment results (NEFSC 2019) to determine the values for stock distribution; the two values are then integrated in the form of regional shares. An alternative to using the stock assessment would be to use synoptic trawl survey information. This potential alternative is described in more detail below. The two regions as defined in the assessment are proposed: (1) ME - NY, (2) NJ - NC. They emanate from the spatial stratification of the stock in to units that generally align with those used for the assessment, which used the Hudson Canyon as the dividing line based on several pieces of evidence that stock dynamics had an important break in this area. These regional shares are then sub-divided into state-specific allocations.

The overall approach can be modified by the Board and Council in various ways. For example, sub-alternatives can be developed for:

- the regional configuration;
- the values for historical participation/initial allocations (e.g., current, status quo allocations, or some variant thereof);
- the weighting values for Initial Allocation and Stock Distribution (90:10, or some variant thereof);
- the increment of change in these values from one year to the next (10%/year, or some variant thereof, and;
- the periodicity of adjustments (e.g., annually vs. biannually).

A cap can also be established to limit the amount of change to the allocations during an adjustment (e.g. 3%-10%).

Data and Methods

Formula

Adapted from the TMGC application (TMGC 2002), the approach for calculating the respective regional shares, which takes historical utilization in to account and adapts to shifts in stock distribution, is as follows:

$$\%RegionalShare = (\alpha_y * \sum_r StateSpecAlloc) + (\beta_y * \%ResDistr_{r,y}) \quad (1)$$

Where α_y = percentage weighting for utilization by year; β_y = percentage weighting for stock distribution by year; $\alpha_y + \beta_y = 100\%$; $StateSpecAlloc$ = state specific allocation; $ResDistr$ = stock distribution; r = region; y = year

Proposed regions:

There are two choices for regional configuration: (1) ME - NY and NJ - NC, or (2) ME - NY, NJ, and DE - NC.

Proposed values for historical participation/initial allocation:

See Initial Allocation section below.

Proposed values for stock distribution:

The current proposal is to use the distribution in the two regions based on the stock assessment exploitable biomass calculations. This could be altered to use synoptic trawl survey information, therefore stock distribution would be based on most recent trawl survey information in that case.

Proposed percentage weighting values for initial allocation and stock distribution:

The initial sharing formula is proposed to be based on the weighting of initial allocation (from historical allocations) by 90% and the weighting of stock distribution by 10%. By the end of the period the shares will be the reciprocal; initial allocation at 10% and stock distribution at 90%. Additional alternatives are presented below.

Proposed increments of change in the weighting values from one adjustment period to the next: Initially proposed at 10% per period. Thus, 90:10 to begin, then: 80:20, 70:30, 60:40, 50:50; 40:60; 30:70; 20:80,

concluding at 10:90. Other alternatives are tested below.

Proposed periodicity of the adjustments:

Bi-annually based on stock assessment updates. If the survey alternative were used, this could be increased to annually.

Overall time horizon for the transition:

The initial proposal would conclude in 9 years. If commenced in 2020, it would conclude in 2028. The duration is dependent on the other options chosen

With these - or alternative - parameters assigned, the region-specific shares then need to be prorated into the existing state-specific allocation structure. This can be accomplished by the equation:

$$NewStateAllocation = \frac{Allocation_s}{\sum_r StateSpecAlloc} * \%RegionalShare \quad (2)$$

Where $Allocation_s$ = the specific state being calculated and the other parameters have already been defined above. This formula basically takes the existing state specific allocations and repropotions them in to the share they represent within the region.

Initial Allocations

Historical state-specific commercial allocations for black sea bass are codified in Amendment 13 to the Fishery Management Plan for Black Sea Bass (FMP) (MAFMC 2003) (Table 2). These allocations can serve as the basis for the initial allocation values in the allocation formula. These values, as used in the formula, would remain consistent throughout the reallocation process, even as the final state allocations change over time, based on equations 1 and 2. This is philosophically consistent with the FMP, as this portion of the allocation formula is meant to represent the historical fishing aspects of the black sea bass fishery.

However, alternative strategies (set forth in the form of sub-alternatives) could be used to set the initial allocation design. That is, the initial initial allocation portion of the allocation design could be adjusted, via revised state allocations, before transitioning into the formulaic approach to be used as the process moves forward.

One way to implement this type of approach would be the following, working from equation 2 above:

$$NewStateAllocation = \frac{Allocation_s + \lambda_s}{\sum_r StateSpecAlloc} * \%RegionalShare \quad (3)$$

Where λ = a state specific allocation additive or reduction factor and s = the state being calculated.

This formula allows for a shift in initial (status quo) allocations to account for potential discrepancies believed to be represented in the existing allocations. Currently, a proposal to add an initial amount to CT's allocation has been considered by the black sea bass management board, so using the equation above, a new allocation amount (λ) would be added to the historical allocation for CT (s).

Stock Distribution

This proposal offers two options for calculating the stock distribution. The first option would be to use the spatial stock assessment to determine the amount of resource in each region (north = NY, CT, RI, MA, NH, ME; south = NJ, DE, MD, VA, NC). The spatial stock assessment calculates a north and south exploitable biomass value, which can then be turned in to a proportion. The benefit of this approach is this number is calculated through a synthesis of many biological parameters and represents the best available science for the population. The drawback is that the assessment is updated periodically (not every year), therefore the information will not be evaluated every year, but would depend on the assessment cycle. Additionally, if the spatial stock assessment were to fail at some point in the future, this would impact the ability to do the dynamic allocation calculations. The current estimated allocation from the 2019 update assessment would be 5,272 MT (2018 exploitable biomass) in the south, 16,924 MT (2018 exploitable biomass) in the north,

equating to 24% of the exploitable biomass in the south and 76% of the exploitable biomass in the north (NEFSC 2019). It is important to note that these are the unadjusted exploitable biomass amounts from the assessment. Since data are readily available for this option, an example calculation and projection has been developed below. The process set forth below addresses total biomass, but it could be modified (and presented as a sub-alternative) to address exploitable biomass.

As an alternative, values for stock distribution can be obtained and calculated using scientific surveys, with results apportioned into regions. Since surveys are undertaken annually, the values for stock distribution, by region, can be recalculated and updated annually, biannually, or upon whatever timeframe is deemed most appropriate, affording an opportunity to regularly adjust allocations in sync with shifts in stock distribution. Such shifts may, or may not, follow consistent trends. Accordingly, the technique affords a dynamic approach, consistent with actual changes in stock distribution. Drawing upon the TMGC approach, a swept area biomass, considered a relative index of abundance, can be computed in each stratum, then summed to derive the biomass index for each region. The biomass index estimate derived from each survey would represent a synoptic snapshot of stock distribution at a specific time during a year. Combining the results of multiple surveys requires an understanding of seasonal movement patterns and how much of the biological year each survey represents. For this reason, it is proposed to use the National Marine Fisheries Service (NMFS) Trawl Survey in combination with the North East Area Monitoring and Assessment Program (NEAMAP) Survey. These are both well-established surveys, currently used in the stock assessment, and are synoptic, covering both offshore and inshore strata. As proposed in this alternative, the existing survey strata could be used to partition the survey information into two stock regions: (1) ME - NY, and (2) NJ - NC. The strata do not align perfectly with these two spatial configurations, but they are relatively close (Figures 1 and 2). Table 1 provides an example of how the strata could be applied for each region.

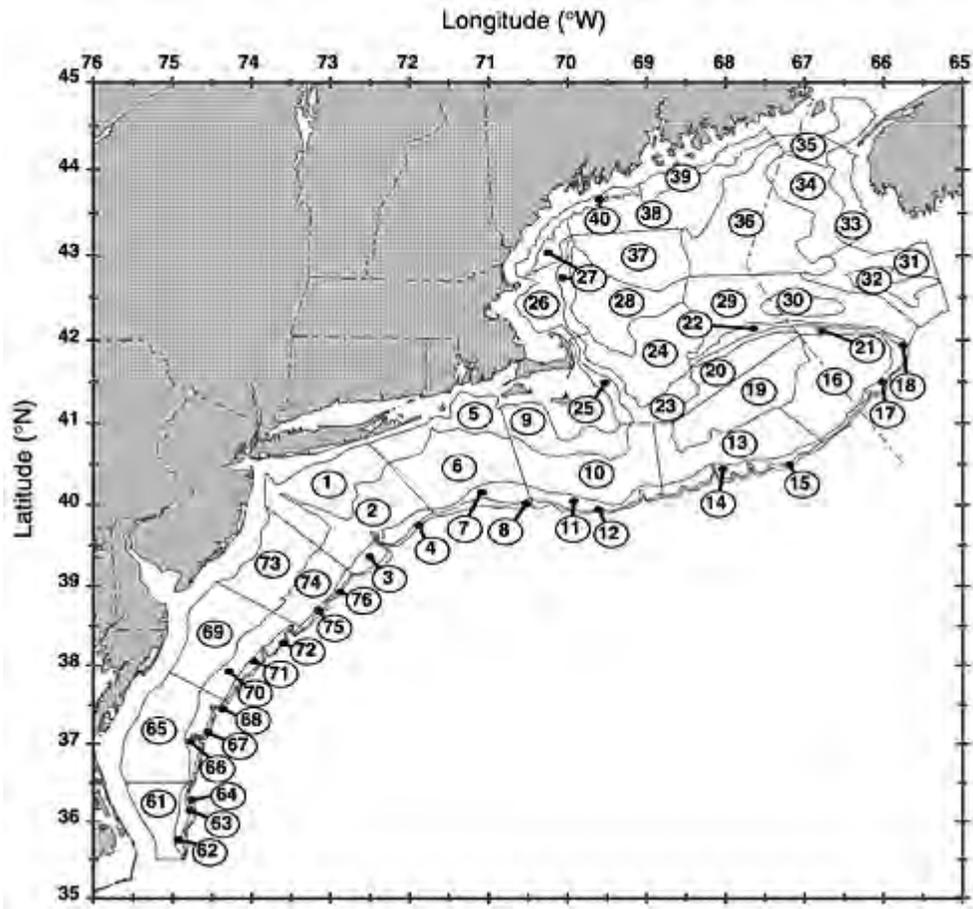


Figure 1: Map of National Marine Fisheries Service trawl survey strata.

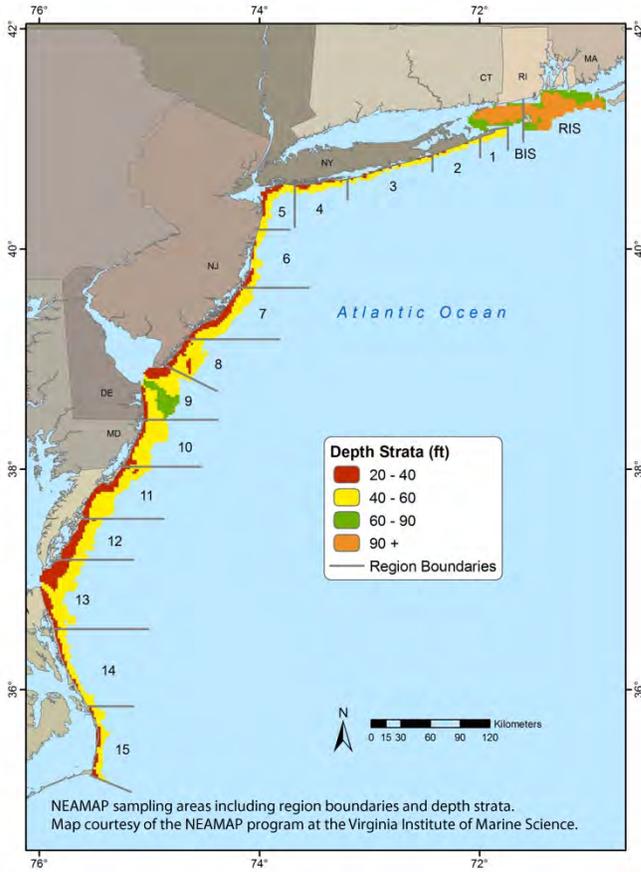


Figure 2: Map of North East Area Monitoring and Assessment Program trawl survey strata.

Table 1 - Strata or Region assigned to each region for stock distribution calculations.

Regions	NMFS Strata	NEAMAP Regions
Region 1: ME - NY	1 - 40	1 - 5, BIS, RIS
Region 2: NJ - NC	3, 61 - 76	6 - 15

*Note: This is a first cut, these should be finalized through discussions between the TC and survey staff.

This approach could be refined over time by developing area polygons that better align with the boards desired regional configuration. Then, using the spatial information from the surveys, the survey information could be partitioned into the polygons.

Additionally, there may be ways to use state survey information within the analysis – either directly by averaging those surveys into the swept area biomass calculations, or indirectly such as using them to verify or corroborate the information from the surveys used in the calculations. Such use of state survey information could be developed and integrated into the process over time via analysis and recommendations from the monitoring and technical committees.

A robust, locally weighted regression algorithm (Cleveland 1979), referred to as LOESS, could then be used to mitigate excessive variations in sampling results. Per the TMGC approach, a 30% smoothing parameter could be used. That level of smoothing was chosen because it reflected current trends, was responsive to changes, and provided the most appropriate results for contemporary resource sharing. The recommended

default of two robustness iterations also was adopted (Cleveland 1979) in the TMGC approach and could also be adopted here. Stock distributions could then be updated annually by incorporating data from the latest survey year available and dropping data from the earliest survey used in the previous year so that a consistent window of data is maintained. After the surveys are combined, the LOESS smoother would be applied to the survey data. The fixed initial allocation (90% weighting in year 1) and the most recent stock distributions as calculated by the surveys (10% weighting in year 1) can then be applied to the sharing formula to determine regional allocation shares for the upcoming fishing year.

The benefit of this approach is that it could be performed annually with the most contemporary data. The drawback is that survey data are prone to variability. The LOESS smoothing and the adjustment cap that is set forth below are designed to account for some of this variability to keep it from causing unreasonable changes in a single year.

As a final nuance to the survey alternative, a sophisticated modeling approach could be developed to achieve the same information as above. Techniques like the use of the VAST model (Thorson 2015) have been shown to be appropriate for this type of an analysis and could be adopted, in lieu of the swept area biomass technique, as a method for calculating stock distribution by region.

For this proposal, the assessment technique will be used as there is actual data that can be used to examine an example. With additional work, a retrospective analysis using trawl survey information could be developed.

Adjustment cap

In addition to the formula for calculating the regional allocations and then translating into the state specific allocations, additional measures could be added by way of an adjustment cap. Such measures would enable various checks and balances to be incorporated into the process to guard against unintended consequences.

One such algorithm, proposed here, is to guard against any abrupt change occurring to any regional allocation in any given year (or other time frame), and thus minimize short-term impacts, by capping the amount of any annual or bi-annual change to the regional shares anywhere between 3 - 10%. This can be shown as:

$$\%RegionalShare = \begin{cases} 3to10\%, & \text{if } \Delta AnnualChange > 3to10\% \\ \%RegionalShare, & \text{if } \Delta AnnualChange \leq 3to10\% \end{cases} \quad (1)$$

The effect would be to ensure that any changes to allocations occur incrementally, even in a case of large shifts in stock distribution in any given year or period. This algorithm serves as an additional layer of protection against large changes, in addition to the other factors outlined above that are also built in to contend with uncertainty and variability.

Flexibility

A key attribute of this proposed new approach for modifying the allocation system is its flexibility. All of the decision points set forth in this proposal, once agreed to, can be adjusted as the process moves forward. Such adjustments, emanating from routine reviews by the Board and Council, can address any of the range of parameters initially set by the Board and Council. The Board and Council could define how changes to the system would be considered and enacted moving forward - e.g., via Addenda and Frameworks, the specifications process, or some other mechanism. The ranges of parameters/issues that readily lend themselves to such adjustment include:

- The α and β parameters can be adjusted to change the way the utilization and distribution are weighted in the equation;
- The increment of change in the α and β parameters can be adjusted to increase or decrease the transition speed;
- The initial state allocations can be set at status quo, or shifted to accommodate various objectives; and
- The adjustment cap can be adjusted to be more or less protective of incremental changes.

Given such flexibility, the Board and Council could decide to implement a transition program that begins in 2021, with either current, status quo allocations, or some variant thereof, and based on assessment information through 2018 (same information used for the proposed 2019 operational stock assessment update), establish stock distribution values for each of the two regions. Using those parameters, and a weighting of allocations by 90% and stock distribution by 10%, enact new, slightly revised state-specific allocations for 2021. If the Board and Council opted for a transitional program involving 10% annual increments, until the weightings reached 10% utilization from initial allocations and 90% stock distribution, this sharing formula would transition from a 90:10 initial allocation-to-stock distribution weighting in 2021 to a 10:90 weighting by 2029. During every adjustment, the trawl survey information would be updated and factored into the stock distribution values. As such, each regional and associated state-specific adjustment would not necessarily be the same, whether in magnitude or direction.

Alternatively, the Board and Council could opt for a transitional program involving 10% increments every two years, or 5% annual increments, or 5% increments every two years, etc. Those alternatives would significantly slow the transition. Some of these variants are illustrated below as examples.

Example

The following are examples of how the new approach can be applied; it incorporates various proposed or strawman parameters, all of which can be modified upon review and consideration by the Board and Council:

- The assessment information is used to calculate the Stock Distribution values.
- Step 1: Apply the state-specific allocations and stock distribution information to equation 1.
 - Summed state allocations for Region 1 (sum of ME-NY)

```
sum.reg1
```

```
## [1] 0.33
```

- Summed state allocation for Region 2 (NJ - NC)

```
sum.reg2
```

```
## [1] 0.67
```

- Step 2: Apply the Stock Distribution information to equation 1.
 - Strawman values:

```
dist.reg1 = 0.76
```

```
dist.reg2 = 0.24
```

- Step 3: Select the increment of adjustment, which will determine the α and β parameters for equation 1 for year 1:
 - The initial sharing formula is proposed to be based on an annual 10% adjustment resulting in the weighting of historical allocations by 90% and the weighting of stock distribution by 10%. Thus:

```
alpha = 0.9
```

```
beta = 0.1
```

- Step 4: Calculate the results, in the form of proportional regional shares, from equation 1:

```
# Region 1 equation and result
```

```
Reg1.Share = (alpha*sum.reg1) + (beta*dist.reg1)
```

```
Reg1.Share
```

```
## [1] 0.373
```

```
# Region 2 equation and result
Reg2.Share = (alpha*sum.reg2) + (beta*dist.reg2)
Reg2.Share
```

```
## [1] 0.627
```

– This does not account for any change to the original allocations, see step 6 below.

- Step 5: Determine need to apply the adjustment cap

```
# Algorithm
if (abs(Reg1.Share-sum.reg1) > 0.1 | abs(Reg2.Share-sum.reg2) > 0.1 ) {
  if (Reg1.Share-sum.reg1 > 0) {
    Reg1.Share = (sum.reg1*(0.1))+sum.reg1
    Reg2.Share = (sum.reg2*(-0.1))+sum.reg2
  }
  if (Reg2.Share-sum.reg2 > 0) {
    Reg1.Share = (sum.reg1*(-.1))+sum.reg1
    Reg2.Share = (sum.reg2*(0.1))+sum.reg2
  }
}
}
```

– As proposed, the rule would cap any change at 10%. Since none of the resulting shares change by more than 10%, the algorithm would not apply in this case.

- Step 6: Establish the state-specific allocation structure to be pro-rated by the regional shares. This example **does not** apply a λ value to alter the allocations per equation 3.
 - The state-specific allocations could be the current, status quo allocations; or they could be variants, established via equation 3.

Table 2 - Current state by state allocations.

State	Current Allocation
Maine	0.005
New Hampshire	0.005
Massachusetts	0.130
Rhode Island	0.110
Connecticut	0.010
New York	0.070
New Jersey	0.200
Delaware	0.050
Maryland	0.110
Virginia	0.200
North Carolina	0.110

Four hypothetical examples of state-specific allocations under the new program were performed and are presented below (Tables 3, 4, and 5; Figures 3, 4, and 5).

Example 1: The first example represents a configuration resulting in more liberal change in state allocations. The parameters are set as follows: 2 regions (ME - NY; NJ - NC); initial allocation = status quo allocations ; transition from 90:10 to 10:90; 10% per year change in the transition from utilization to distribution; annual adjustments; the transition time to 90% weight on the stock distribution is 9 years; 10% adjustment cap; distribution assumption is based on the exploitable biomass by region from the assessment for the time period of 2004 - 2012; distribution of adjustments to states within a region are based on initial allocations.

Example 2: The second example represents a more conservative configuration, with more limited changes to state allocations. The parameters are set as follows: 2 regions (ME - NY; NJ - NC); initial allocation = status quo allocations; transition from 90:10 to 30:70; 5% per year change in the transition from utilization to distribution; annual adjustments; the transition time to 70% weight on the stock distribution is 12 years; 3% adjustment cap; distribution assumption is based on the exploitable biomass by region from the assessment for the time period of 2004 - 2015; distribution of adjustments to states within a region are based on initial allocations.

Example 3: The final example is intended to showcase a number of additional modifications that could be made to the approach to achieve certain objectives. In discussions amongst the PDT (and previously the Board regarding recreational black sea bass) it has been noted that it may be appropriate to treat New Jersey as an individual region due to its geographic position straddling the division of the Northern and Southern regions adjacent to Hudson Canyon. Additionally, this option increases the allocations for Connecticut and New York due to their allocations being disproportionate to their current resource availability (as defined in Equation 3 above). Lastly, the PDT discussed the option of holding Maine and New Hampshire's current allocations static throughout the transaction. To demonstrate these modifications, the parameters are set as follows: 4 regions (ME and NH remaining as a non-dynamic region with static allocations; MA - NY; NJ as a stand-alone region; and DE - NC); initial allocation = CT and NY base allocations increased by 1% in each of the first three years; transition from 90:10 to 10:90; 10% per year change in the transition from utilization to distribution; annual adjustments; the transition time to 90% weight on the stock distribution is 9 years; 10% adjustment cap; distribution assumption is based on the exploitable biomass by region from the assessment for the time period of 2004 - 2012, and assumes NJ gets 10% of its allocation from the northern region distribution and 10% of its allocation from the southern region distribution; distribution of adjustments to states within a region are based on initial allocations plus the incremental change as noted above.

The allocations presented in these tables would be different if any of the parameters were changed. Additionally, note that these examples are based on a scenario where the approach was implemented in 2004. The example shows how the system would work and the effects to the states over the initial period of adjustment from initial allocation having the highest weight in the equation to stock distribution having the highest weight during a period of time where the exploitable biomass was rapidly changing.

Table 3 - Allocation trajectory for all states under the parameters outlined in example 1 above. The adjustment cap is not triggered in any year in this example. This is a retrospective analysis as if this method were in place beginning in 2004.

State	2004	2005	2006	2007	2008	2009	2010	2011	2012
Maine	0.005	0.006	0.006	0.007	0.008	0.008	0.009	0.011	0.011
New Hampshire	0.005	0.006	0.006	0.007	0.008	0.008	0.009	0.011	0.011
Massachusetts	0.137	0.147	0.158	0.174	0.195	0.210	0.238	0.275	0.293
Rhode Island	0.116	0.125	0.134	0.147	0.165	0.178	0.201	0.233	0.248
Connecticut	0.011	0.011	0.012	0.013	0.015	0.016	0.018	0.021	0.023
New York	0.074	0.079	0.085	0.094	0.105	0.113	0.128	0.148	0.158
New Jersey	0.195	0.187	0.179	0.167	0.151	0.139	0.119	0.090	0.076
Delaware	0.049	0.047	0.045	0.042	0.038	0.035	0.030	0.023	0.019
Maryland	0.107	0.103	0.098	0.092	0.083	0.077	0.065	0.050	0.042
Virginia	0.195	0.187	0.179	0.167	0.151	0.139	0.119	0.090	0.076
North Carolina	0.107	0.103	0.098	0.092	0.083	0.077	0.065	0.050	0.042

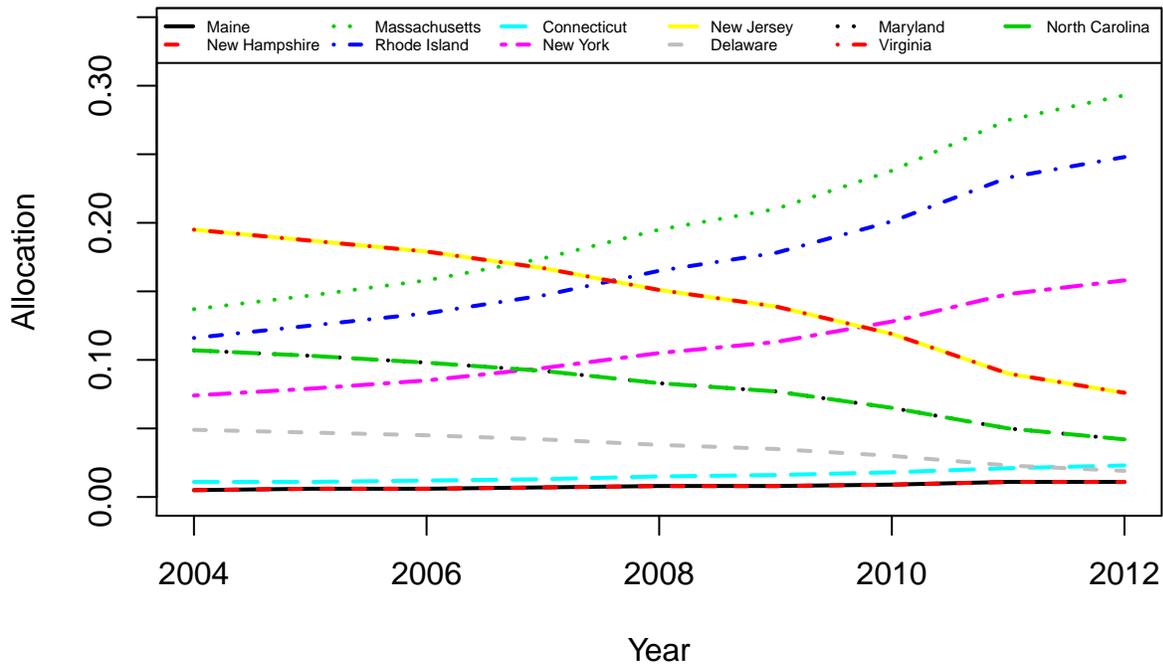


Figure 3: Allocation trajectory for all states under the parameters outlined in example 1 above. The adjustment cap is not triggered in any year in this example. This is a retrospective analysis as if this method were in place beginning in 2004.

Table 4 - Allocation trajectory for all states under the parameters outlined in example 2 above. The adjustment cap is triggered in each year from 2012 through 2015 in this example. This is a retrospective analysis as if this method were in place beginning in 2004. The adjustment cap is triggered in 2012 - 2015 in this example.

State	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Maine	0.005	0.005	0.006	0.006	0.006	0.007	0.007	0.007	0.007	0.007	0.008	0.008
New Hampshire	0.005	0.005	0.006	0.006	0.006	0.007	0.007	0.007	0.007	0.007	0.008	0.008
Massachusetts	0.134	0.139	0.144	0.152	0.162	0.170	0.176	0.182	0.187	0.193	0.198	0.205
Rhode Island	0.113	0.117	0.122	0.129	0.137	0.144	0.149	0.154	0.159	0.163	0.168	0.173
Connecticut	0.010	0.011	0.011	0.012	0.012	0.013	0.014	0.014	0.014	0.015	0.015	0.016
New York	0.072	0.075	0.078	0.082	0.088	0.092	0.095	0.098	0.101	0.104	0.107	0.110
New Jersey	0.197	0.193	0.189	0.183	0.175	0.170	0.164	0.159	0.154	0.150	0.145	0.141
Delaware	0.049	0.048	0.047	0.046	0.044	0.042	0.041	0.040	0.039	0.037	0.036	0.035
Maryland	0.109	0.106	0.104	0.101	0.096	0.093	0.090	0.087	0.085	0.082	0.080	0.077
Virginia	0.197	0.193	0.189	0.183	0.175	0.170	0.164	0.159	0.154	0.150	0.145	0.141
North Carolina	0.109	0.106	0.104	0.101	0.096	0.093	0.090	0.087	0.085	0.082	0.080	0.077

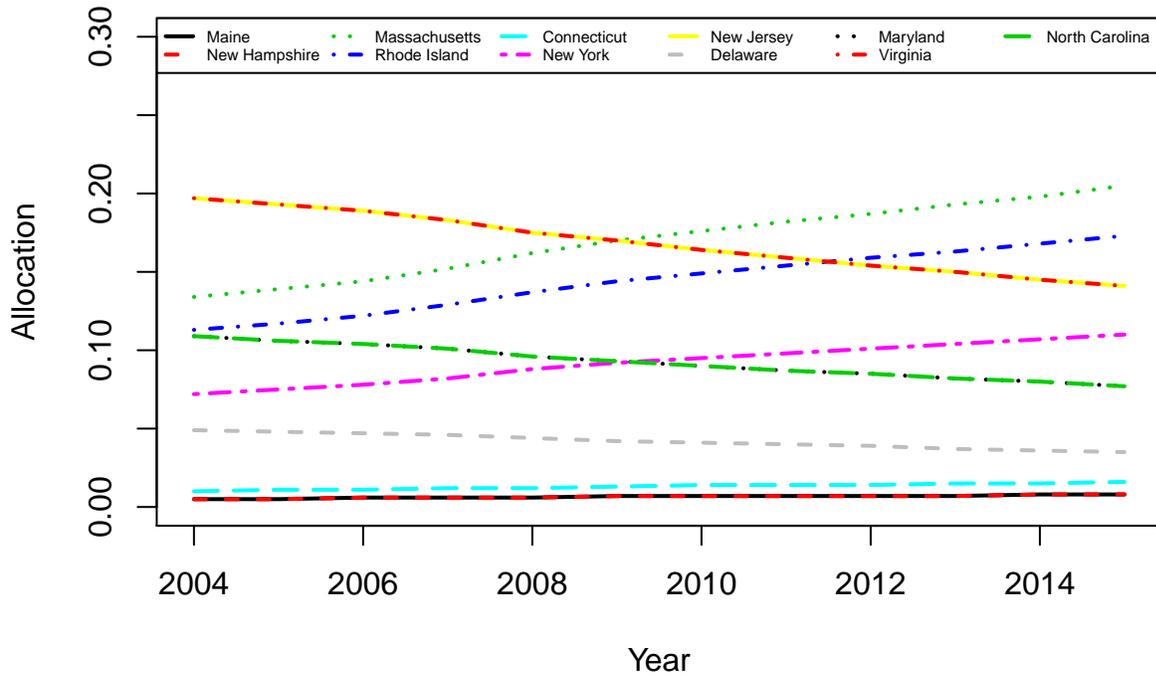


Figure 4: Allocation trajectory for all states under the parameters outlined in example 2 above. The adjustment cap is triggered in each year from 2012 through 2015 in this example. This is a retrospective analysis as if this method were in place beginning in 2004. The adjustment cap is triggered in 2012 - 2015 in this example.

Table 5 - Allocation trajectory for all states under the parameters outlined in example 3 above. The adjustment cap is not triggered in any year in this example. This is a retrospective analysis as if this method were in place beginning in 2004.

State	2004	2005	2006	2007	2008	2009	2010	2011	2012
Maine	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
New Hampshire	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Massachusetts	0.128	0.125	0.122	0.131	0.143	0.154	0.171	0.190	0.200
Rhode Island	0.108	0.105	0.102	0.109	0.120	0.128	0.143	0.159	0.167
Connecticut	0.020	0.030	0.040	0.043	0.047	0.051	0.056	0.063	0.066
New York	0.081	0.090	0.100	0.108	0.118	0.127	0.141	0.157	0.164
New Jersey	0.194	0.194	0.195	0.197	0.199	0.201	0.210	0.213	0.216
Delaware	0.046	0.043	0.040	0.037	0.033	0.030	0.025	0.019	0.017
Maryland	0.105	0.100	0.098	0.090	0.081	0.073	0.061	0.047	0.041
Virginia	0.193	0.187	0.184	0.170	0.152	0.138	0.115	0.089	0.077
North Carolina	0.105	0.100	0.098	0.090	0.081	0.073	0.061	0.047	0.041

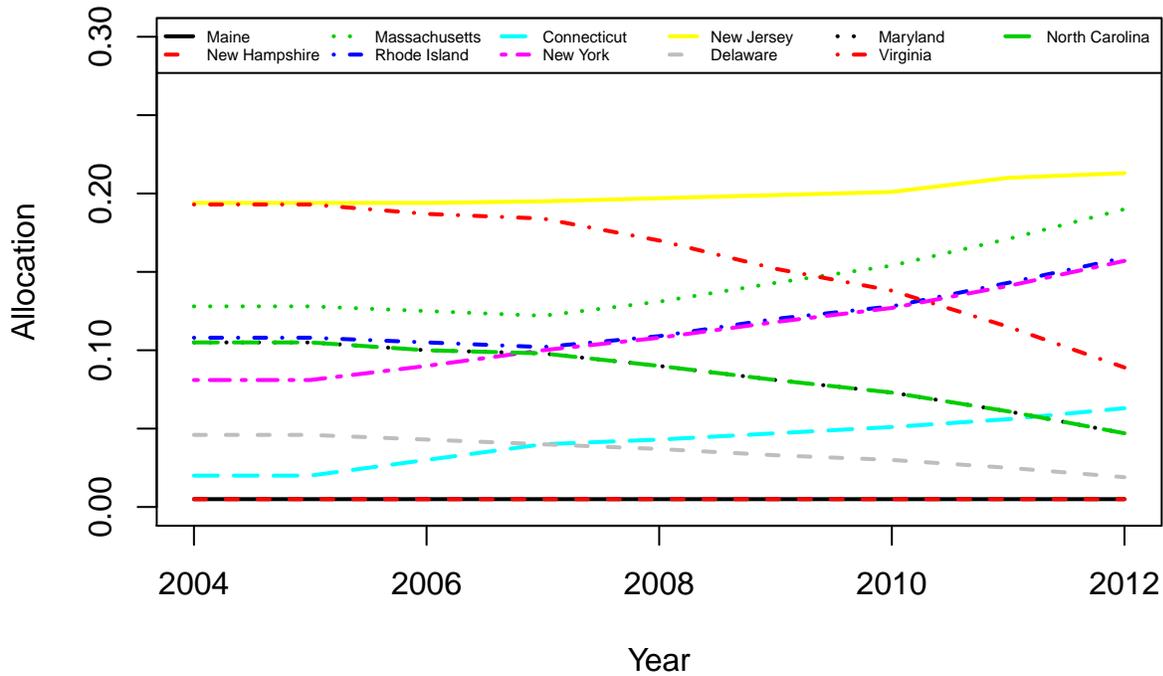


Figure 5: Allocation trajectory for all states under the parameters outlined in example 3 above. The adjustment cap is not triggered in any year in this example. This is a retrospective analysis as if this method were in place beginning in 2004.

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Appendix 3. Example changes in allocation distribution under various trigger and percentage approaches

Appendix X Examples			
Example	Option	Trigger/Percentage	Approach
1-A	Trigger	3 million	Static trigger with surplus allocated regionally and proportional to states' initial allocations
1-B	Trigger	3 million	1-A, if one year's quota is below the trigger
2	Trigger, Three regions	3 million	Static trigger with surplus allocated regionally and proportional to states' initial allocations with NJ as a third region
3	Trigger	3 million	Static trigger with surplus allocated regionally and equally between states
4-A	Trigger	3 million	Dynamic trigger with surplus allocated regionally and proportional to states' base allocations
4-B	Trigger	3 million	4-A, if one year's quota is below the trigger
5	Trigger	3 million	Dynamic trigger with surplus allocated regionally and equally between states
6	Trigger	4.5 million	Dynamic trigger with surplus allocated regionally and proportional to states' base allocations
7-A	Trigger with Increase to CT and NY First	3 million	Static trigger with surplus allocated regionally and proportional to states' initial allocations
7-B	Trigger with Increase to CT and NY First	3 million	7-A, if one year's quota is below the trigger
8	Percentage	25%	Surplus allocated equally between states
9	Percentage	25%	Surplus allocated regionally and equally between the states
10	Percentage	25%	Surplus allocated regionally and proportional to states' initial allocations
11	Percentage	75%	Surplus allocated regionally and equally between the states
12	Percentage	75%	Surplus allocated regionally and proportional to states' initial allocations

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EXAMPLE 1-A

Trigger Value: 3 million pounds

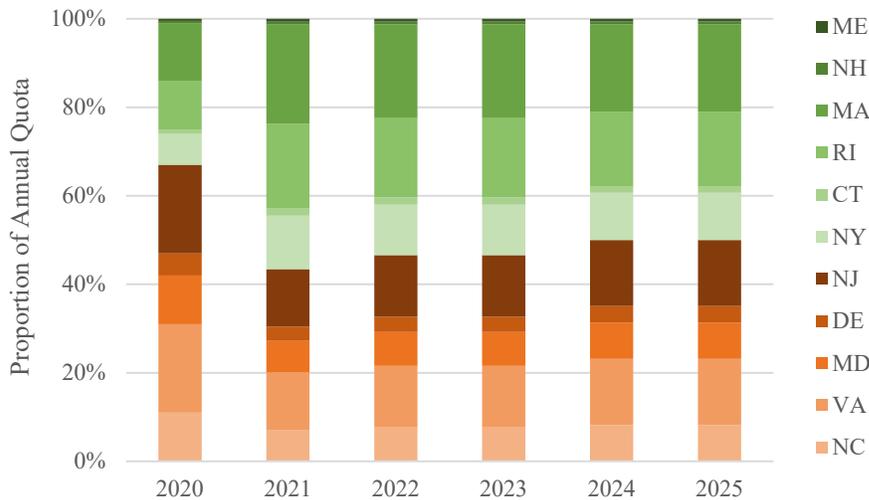
Base allocations: Static

Distribution of surplus quota: Surplus quota allocated regionally according to stock distribution (84% in the North and 16% in the South according to the 2019 stock assessment) and, within a region, allocated in proportion to initial allocations.

Regional configuration: ME-NY and NJ-NC

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	4,500,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.7%	0.6%	0.6%	0.6%	0.6%
NH	0.5%	0.7%	0.6%	0.6%	0.6%	0.6%
MA	13.0%	22.5%	21.2%	21.2%	19.8%	19.8%
RI	11.0%	19.0%	17.9%	17.9%	16.8%	16.8%
CT	1.0%	1.7%	1.6%	1.6%	1.5%	1.5%
NY	7.0%	12.1%	11.4%	11.4%	10.7%	10.7%
NJ	20.0%	13.0%	13.9%	13.9%	14.9%	14.9%
DE	5.0%	3.2%	3.5%	3.5%	3.7%	3.7%
MD	11.0%	7.1%	7.7%	7.7%	8.2%	8.2%
VA	20.0%	13.0%	13.9%	13.9%	14.9%	14.9%
NC	11.0%	7.1%	7.7%	7.7%	8.2%	8.2%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	56.6%	53.4%	53.4%	50.0%	50.0%
South	67.0%	43.4%	46.6%	46.6%	50.0%	50.0%



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EXAMPLE 1-B (1-A approach with one year's quota under the trigger)

Trigger Value: 3 million pounds

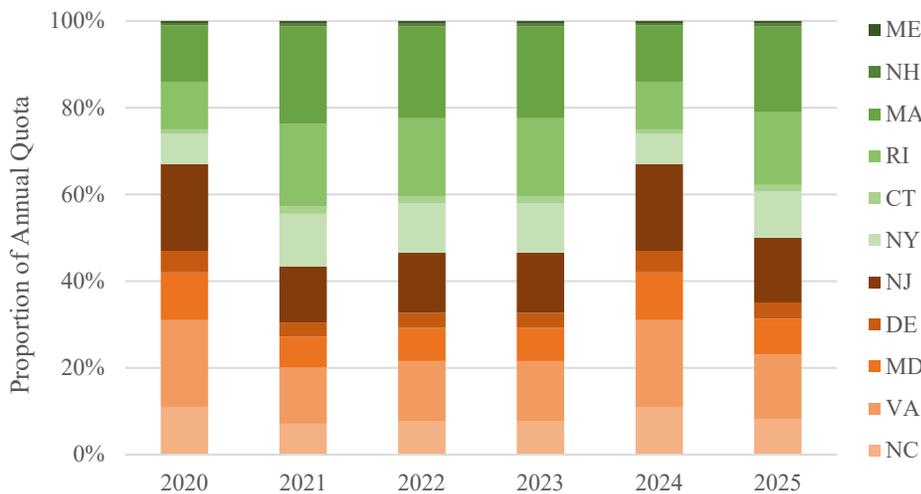
Base allocations: Static

Distribution of surplus quota: Surplus quota allocated regionally according to stock distribution (84% in the North and 16% in the South according to the 2019 stock assessment) and, within a region, allocated in proportion to initial allocations.

Regional configuration: ME-NY and NJ-NC

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	2,800,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.7%	0.6%	0.6%	0.5%	0.6%
NH	0.5%	0.7%	0.6%	0.6%	0.5%	0.6%
MA	13.0%	22.5%	21.2%	21.2%	13.0%	19.8%
RI	11.0%	19.0%	17.9%	17.9%	11.0%	16.8%
CT	1.0%	1.7%	1.6%	1.6%	1.0%	1.5%
NY	7.0%	12.1%	11.4%	11.4%	7.0%	10.7%
NJ	20.0%	13.0%	13.9%	13.9%	20.0%	14.9%
DE	5.0%	3.2%	3.5%	3.5%	5.0%	3.7%
MD	11.0%	7.1%	7.7%	7.7%	11.0%	8.2%
VA	20.0%	13.0%	13.9%	13.9%	20.0%	14.9%
NC	11.0%	7.1%	7.7%	7.7%	11.0%	8.2%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	56.6%	53.4%	53.4%	33.0%	50.0%
South	67.0%	43.4%	46.6%	46.6%	67.0%	50.0%



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EXAMPLE 2

Trigger Value: 3 million pounds

Base allocations: Static

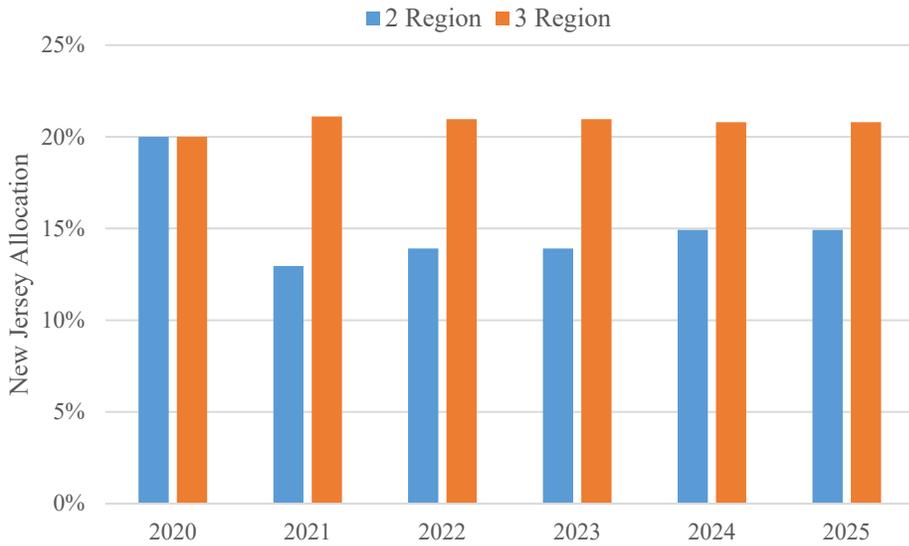
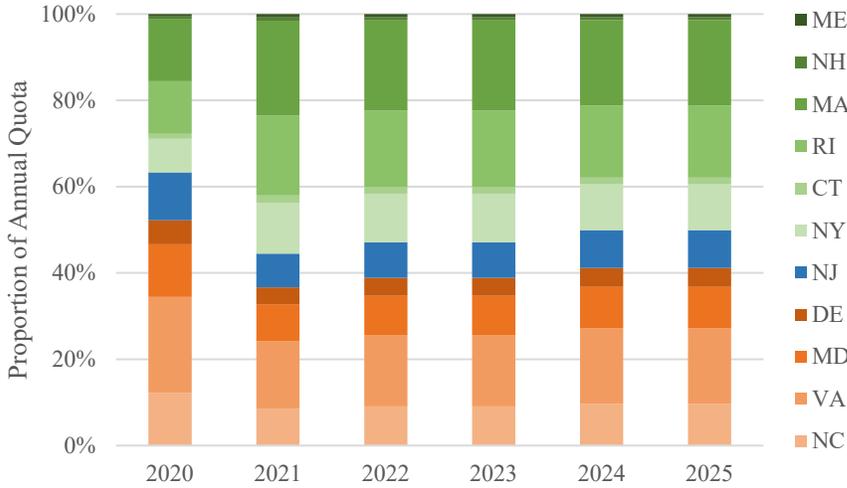
Distribution of surplus quota: Surplus quota allocated regionally according to stock distribution (84% in the North and 16% in the South according to the 2019 stock assessment) and, within a region, allocated in proportion to initial allocations.

Regional configuration: ME-NY, NJ, DE-NC

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	4,500,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.7%	0.6%	0.6%	0.6%	0.6%
NH	0.5%	0.7%	0.6%	0.6%	0.6%	0.6%
MA	13.0%	18.8%	18.0%	18.0%	17.2%	17.2%
RI	11.0%	15.9%	15.2%	15.2%	14.5%	14.5%
CT	1.0%	1.4%	1.4%	1.4%	1.3%	1.3%
NY	7.0%	10.1%	9.7%	9.7%	9.2%	9.2%
NJ	20.0%	21.1%	21.0%	21.0%	20.8%	20.8%
DE	5.0%	3.3%	3.6%	3.6%	3.8%	3.8%
MD	11.0%	7.3%	7.8%	7.8%	8.4%	8.4%
VA	20.0%	13.3%	14.2%	14.2%	15.2%	15.2%
NC	11.0%	7.3%	7.8%	7.8%	8.4%	8.4%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	47.5%	45.6%	45.6%	43.5%	43.5%
NJ	20.0%	21.1%	21.0%	21.0%	20.8%	20.8%
South	47.0%	31.4%	33.5%	33.5%	35.7%	35.7%

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The above Figure provides a comparison of NJ’s percent allocation under the 2 region configuration provided in Example 1 (blue bars) and the 3 region configuration provided in Example 2 (orange bars). All other variables are held constant between Example 1-A and Example 2.

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EXAMPLE 3

Trigger Value: 3 million pounds

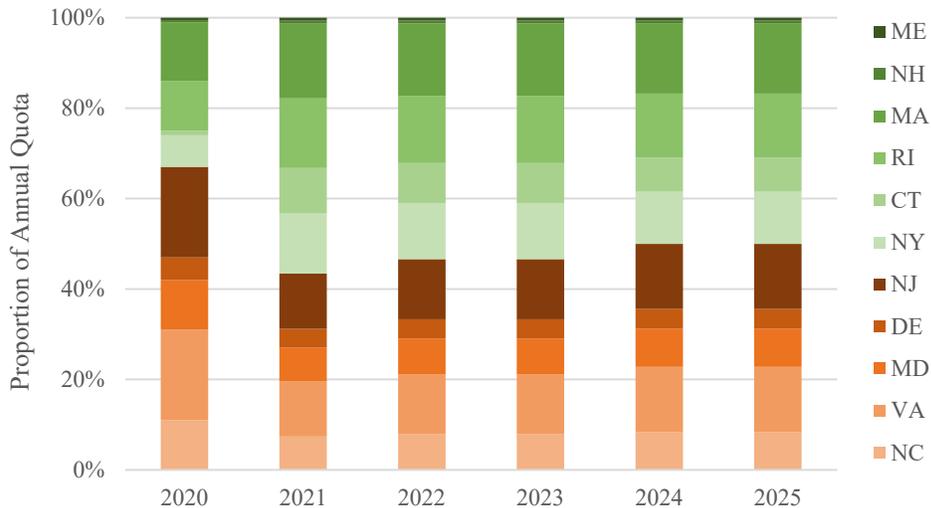
Base allocations: Static

Distribution of surplus quota: Surplus quota allocated regionally according to stock distribution (84% in the North and 16% in the South according to the 2019 stock assessment) and, within a region, allocated equally to each state.

Regional configuration: ME-NY and NJ-NC

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	4,500,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.7%	0.6%	0.6%	0.6%	0.6%
NH	0.5%	0.7%	0.6%	0.6%	0.6%	0.6%
MA	13.0%	16.5%	16.0%	16.0%	15.5%	15.5%
RI	11.0%	15.4%	14.8%	14.8%	14.2%	14.2%
CT	1.0%	10.1%	8.8%	8.8%	7.5%	7.5%
NY	7.0%	13.3%	12.4%	12.4%	11.5%	11.5%
NJ	20.0%	12.2%	13.3%	13.3%	14.4%	14.4%
DE	5.0%	4.2%	4.3%	4.3%	4.4%	4.4%
MD	11.0%	7.4%	7.9%	7.9%	8.4%	8.4%
VA	20.0%	12.2%	13.3%	13.3%	14.4%	14.4%
NC	11.0%	7.4%	7.9%	7.9%	8.4%	8.4%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	56.6%	53.4%	53.4%	50.0%	50.0%
South	67.0%	43.4%	46.6%	46.6%	50.0%	50.0%



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EXAMPLE 4-A

Trigger Value: 3 million pounds

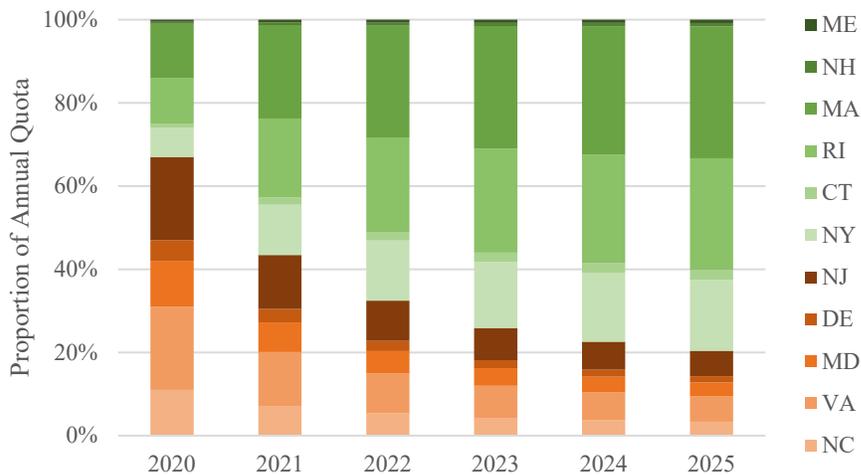
Base allocations: Dynamic

Distribution of surplus quota: Surplus quota allocated regionally according to stock distribution (84% in the North and 16% in the South according to the 2019 stock assessment) and, within a region, allocated in proportion to base allocations.

Regional configuration: ME-NY and NJ-NC.

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	4,500,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.7%	0.7%	0.8%	0.8%	0.8%
NH	0.5%	0.7%	0.7%	0.8%	0.8%	0.8%
MA	13.0%	22.5%	26.8%	29.5%	30.8%	31.7%
RI	11.0%	19.0%	22.7%	24.9%	26.1%	26.8%
CT	1.0%	1.7%	2.1%	2.3%	2.4%	2.4%
NY	7.0%	12.1%	14.5%	15.9%	16.6%	17.1%
NJ	20.0%	13.0%	9.7%	7.7%	6.7%	6.1%
DE	5.0%	3.2%	2.4%	1.9%	1.7%	1.5%
MD	11.0%	7.1%	5.3%	4.2%	3.7%	3.3%
VA	20.0%	13.0%	9.7%	7.7%	6.7%	6.1%
NC	11.0%	7.1%	5.3%	4.2%	3.7%	3.3%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	56.6%	67.5%	74.1%	77.4%	79.6%
South	67.0%	43.4%	32.5%	25.9%	22.6%	20.4%



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EXAMPLE 4-B (4-A approach with one year's quota under the trigger)

Trigger Value: 3 million pounds

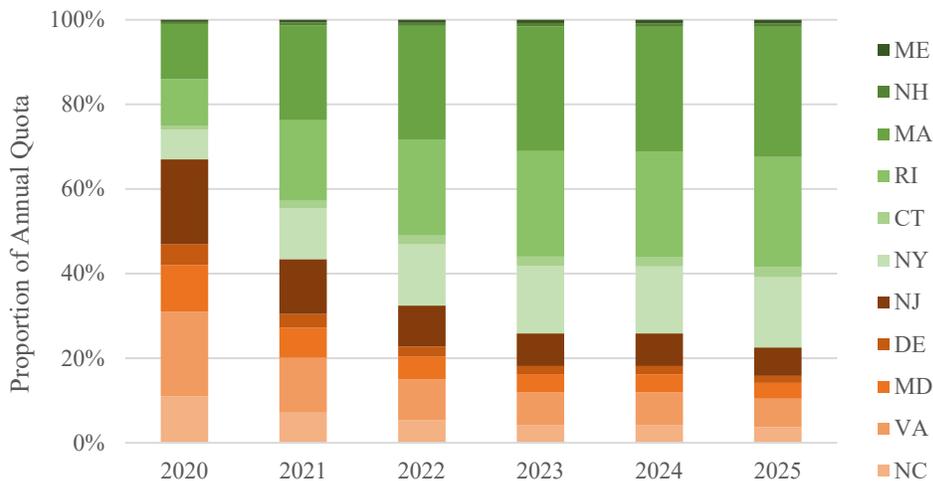
Base allocations: Dynamic

Distribution of surplus quota: Surplus quota allocated regionally according to stock distribution (84% in the North and 16% in the South according to the 2019 stock assessment) and, within a region, allocated in proportion to base allocations.

Regional configuration: ME-NY and NJ-NC.

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	2,800,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.7%	0.7%	0.8%	0.8%	0.8%
NH	0.5%	0.7%	0.7%	0.8%	0.8%	0.8%
MA	13.0%	22.5%	26.8%	29.5%	29.5%	30.8%
RI	11.0%	19.0%	22.7%	24.9%	24.9%	26.0%
CT	1.0%	1.7%	2.1%	2.3%	2.3%	2.4%
NY	7.0%	12.1%	14.5%	15.9%	15.9%	16.6%
NJ	20.0%	13.0%	9.7%	7.7%	7.7%	6.7%
DE	5.0%	3.2%	2.4%	1.9%	1.9%	1.7%
MD	11.0%	7.1%	5.3%	4.2%	4.2%	3.7%
VA	20.0%	13.0%	9.7%	7.7%	7.7%	6.7%
NC	11.0%	7.1%	5.3%	4.2%	4.2%	3.7%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	56.6%	67.5%	74.1%	74.2%	77.4%
South	67.0%	43.4%	32.5%	25.9%	25.8%	22.6%



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EXAMPLE 5

Trigger Value: 3 million pounds

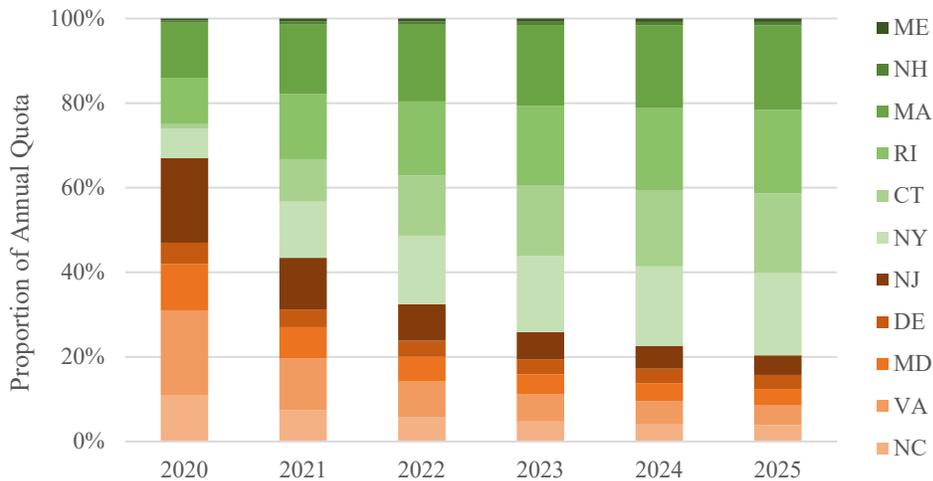
Base allocations: Dynamic

Distribution of surplus quota: Surplus quota allocated regionally according to stock distribution (84% in the North and 16% in the South according to the 2019 stock assessment) and, within a region, allocated equally to each state.

Regional configuration: ME-NY and NJ-NC.

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	4,500,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.7%	0.7%	0.8%	0.8%	0.8%
NH	0.5%	0.7%	0.7%	0.8%	0.8%	0.8%
MA	13.0%	16.5%	18.1%	19.1%	19.6%	19.9%
RI	11.0%	15.4%	17.5%	18.7%	19.3%	19.8%
CT	1.0%	10.1%	14.3%	16.8%	18.1%	18.9%
NY	7.0%	13.3%	16.2%	18.0%	18.8%	19.4%
NJ	20.0%	12.2%	8.6%	6.5%	5.4%	4.6%
DE	5.0%	4.2%	3.8%	3.5%	3.4%	3.4%
MD	11.0%	7.4%	5.7%	4.7%	4.2%	3.9%
VA	20.0%	12.2%	8.6%	6.5%	5.4%	4.6%
NC	11.0%	7.4%	5.7%	4.7%	4.2%	3.9%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	56.6%	67.5%	74.1%	77.4%	79.6%
South	67.0%	43.4%	32.5%	25.9%	22.6%	20.4%



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EXAMPLE 6

Trigger Value: 4.5 million pounds

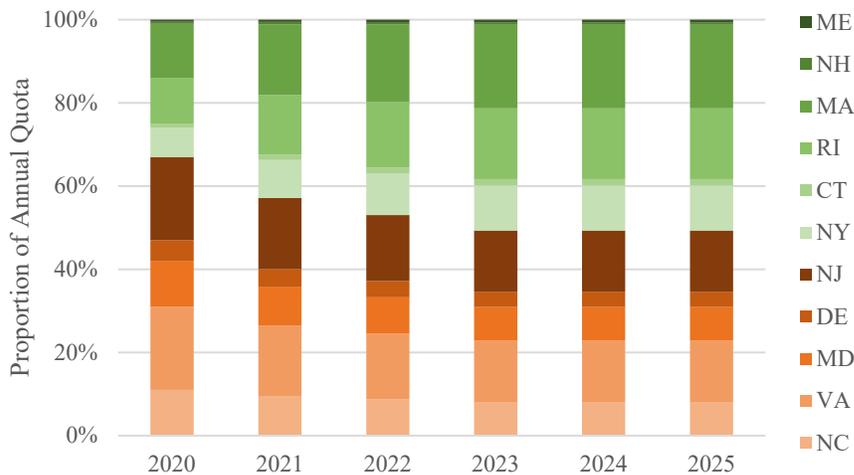
Base allocations: Dynamic

Distribution of surplus quota: Surplus quota allocated regionally according to stock distribution (84% in the North and 16% in the South according to the 2019 stock assessment) and, within a region, allocated in proportion to base allocations.

Regional configuration: ME-NY and NJ-NC.

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	4,500,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%
NH	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%
MA	13.0%	17.0%	18.6%	20.1%	20.1%	20.1%
RI	11.0%	14.3%	15.7%	17.0%	17.0%	17.0%
CT	1.0%	1.3%	1.4%	1.5%	1.5%	1.5%
NY	7.0%	9.1%	10.0%	10.8%	10.8%	10.8%
NJ	20.0%	17.1%	15.8%	14.7%	14.7%	14.7%
DE	5.0%	4.3%	4.0%	3.7%	3.7%	3.7%
MD	11.0%	9.4%	8.7%	8.1%	8.1%	8.1%
VA	20.0%	17.1%	15.8%	14.7%	14.7%	14.7%
NC	11.0%	9.4%	8.7%	8.1%	8.1%	8.1%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	42.9%	47.0%	50.7%	50.7%	50.7%
South	67.0%	57.1%	53.0%	49.3%	49.3%	49.3%



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EXAMPLE 7-A (Increase to Connecticut and New York Quotas First)

Trigger Value: 3 million pounds

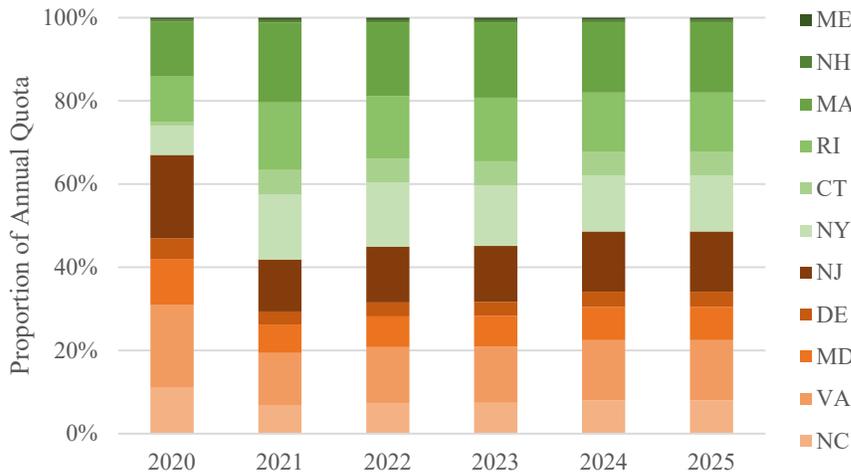
Base allocations: Static

Distribution of surplus quota: Surplus quota first allocated to increase Connecticut to 5%, then to increase New York to 9%. Further surplus is allocated regionally according to stock distribution (84% in the North and 16% in the South according to the 2019 stock assessment) and, within a region, allocated in proportion to historic allocations.

Regional configuration: ME-NY and NJ-NC

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	4,500,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.6%	0.5%	0.6%	0.5%	0.5%
NH	0.5%	0.6%	0.5%	0.6%	0.5%	0.5%
MA	13.0%	19.2%	17.8%	18.1%	16.9%	16.9%
RI	11.0%	16.3%	15.0%	15.3%	14.3%	14.3%
CT	1.0%	5.9%	5.8%	5.8%	5.6%	5.6%
NY	7.0%	15.6%	15.4%	14.5%	13.4%	13.4%
NJ	20.0%	12.5%	13.4%	13.5%	14.5%	14.5%
DE	5.0%	3.1%	3.4%	3.4%	3.6%	3.6%
MD	11.0%	6.9%	7.4%	7.4%	8.0%	8.0%
VA	20.0%	12.5%	13.4%	13.5%	14.5%	14.5%
NC	11.0%	6.9%	7.4%	7.4%	8.0%	8.0%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	58.1%	55.0%	54.9%	51.4%	51.4%
South	67.0%	41.9%	45.0%	45.1%	48.6%	48.6%



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EXAMPLE 7-B (7-A approach with one year's quota under the trigger)

Trigger Value: 3 million pounds

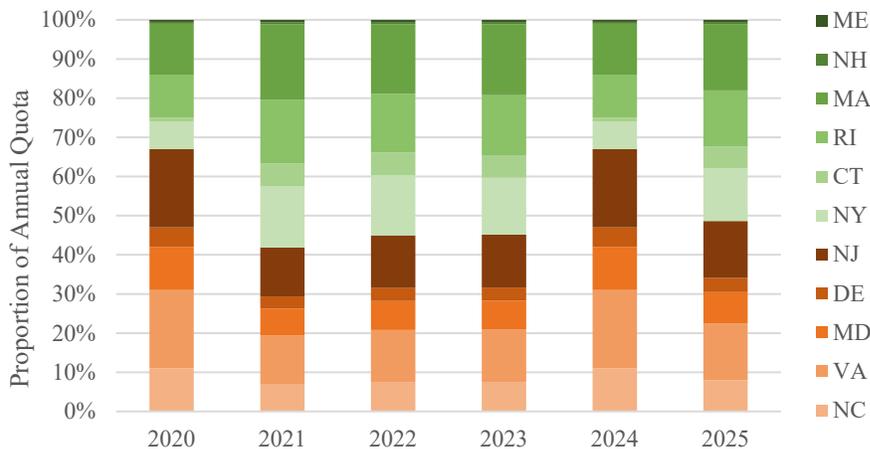
Base allocations: Static

Distribution of surplus quota: Surplus quota first allocated to increase Connecticut to 5%, then to increase New York to 9%. Further surplus is allocated regionally according to stock distribution (84% in the North and 16% in the South according to the 2019 stock assessment) and, within a region, allocated in proportion to historic allocations.

Regional configuration: ME-NY and NJ-NC

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	2,800,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.6%	0.5%	0.6%	0.5%	0.5%
NH	0.5%	0.6%	0.5%	0.6%	0.5%	0.5%
MA	13.0%	19.2%	17.8%	18.1%	13.0%	16.9%
RI	11.0%	16.3%	15.0%	15.3%	11.0%	14.3%
CT	1.0%	5.9%	5.8%	5.8%	1.0%	5.6%
NY	7.0%	15.6%	15.4%	14.5%	7.0%	13.4%
NJ	20.0%	12.5%	13.4%	13.5%	20.0%	14.5%
DE	5.0%	3.1%	3.4%	3.4%	5.0%	3.6%
MD	11.0%	6.9%	7.4%	7.4%	11.0%	8.0%
VA	20.0%	12.5%	13.4%	13.5%	20.0%	14.5%
NC	11.0%	6.9%	7.4%	7.4%	11.0%	8.0%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	58.1%	55.0%	54.9%	33.0%	51.4%
South	67.0%	41.9%	45.0%	45.1%	67.0%	48.6%



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EXAMPLE 8

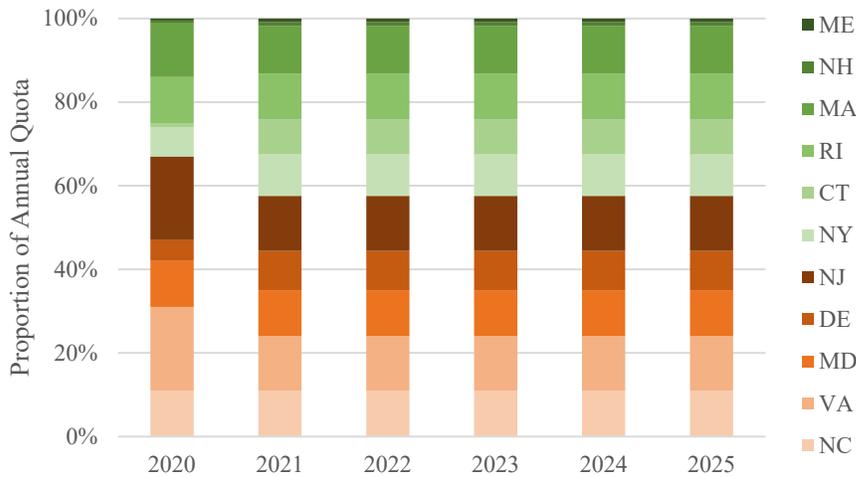
Base percentage: 25%

Distribution of surplus quota: Surplus quota allocated equally to each state from Massachusetts to North Carolina.

Regional configuration: ME-NY and NJ-NC

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	4,500,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.9%	0.9%	0.9%	0.9%	0.9%
NH	0.5%	0.9%	0.9%	0.9%	0.9%	0.9%
MA	13.0%	11.4%	11.4%	11.4%	11.4%	11.4%
RI	11.0%	10.9%	10.9%	10.9%	10.9%	10.9%
CT	1.0%	8.4%	8.4%	8.4%	8.4%	8.4%
NY	7.0%	9.9%	9.9%	9.9%	9.9%	9.9%
NJ	20.0%	13.2%	13.2%	13.2%	13.2%	13.2%
DE	5.0%	9.4%	9.4%	9.4%	9.4%	9.4%
MD	11.0%	10.9%	10.9%	10.9%	10.9%	10.9%
VA	20.0%	13.2%	13.2%	13.2%	13.2%	13.2%
NC	11.0%	10.9%	10.9%	10.9%	10.9%	10.9%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	42.4%	42.4%	42.4%	42.4%	42.4%
South	67.0%	57.6%	57.6%	57.6%	57.6%	57.6%



Draft Addendum for Public Comment

EXAMPLE 9

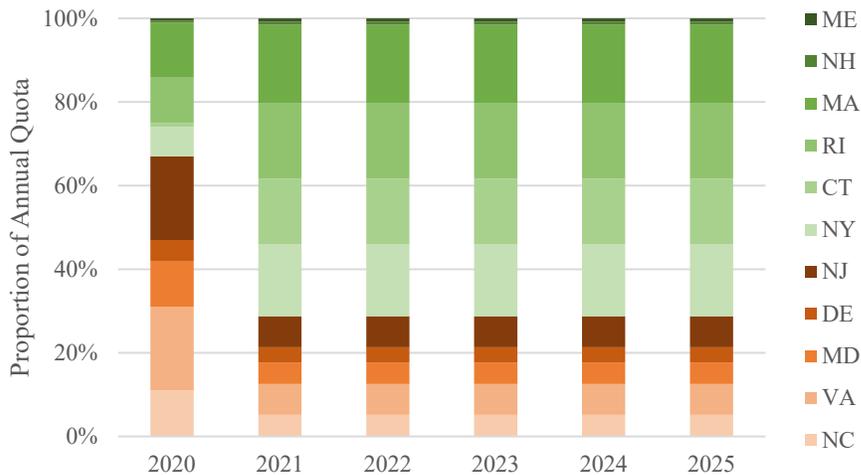
Base percentage: 25%

Distribution of surplus quota: Surplus quota allocated regionally according to stock distribution (84% in the North and 16% in the South according to the 2019 stock assessment) and, within a region, allocated equally to each state.

Regional configuration: ME-NY and NJ-NC

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	4,500,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.8%	0.8%	0.8%	0.8%	0.8%
NH	0.5%	0.8%	0.8%	0.8%	0.8%	0.8%
MA	13.0%	18.7%	18.7%	18.7%	18.7%	18.7%
RI	11.0%	18.2%	18.2%	18.2%	18.2%	18.2%
CT	1.0%	15.7%	15.7%	15.7%	15.7%	15.7%
NY	7.0%	17.2%	17.2%	17.2%	17.2%	17.2%
NJ	20.0%	7.4%	7.4%	7.4%	7.4%	7.4%
DE	5.0%	3.7%	3.7%	3.7%	3.7%	3.7%
MD	11.0%	5.2%	5.2%	5.2%	5.2%	5.2%
VA	20.0%	7.4%	7.4%	7.4%	7.4%	7.4%
NC	11.0%	5.2%	5.2%	5.2%	5.2%	5.2%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	71.3%	71.3%	71.3%	71.3%	71.3%
South	67.0%	28.8%	28.8%	28.8%	28.8%	28.8%



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EXAMPLE 10

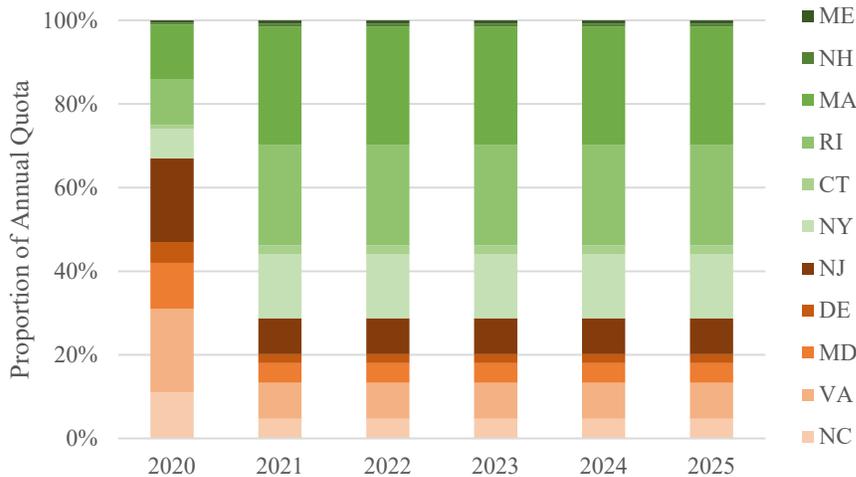
Base percentage: 25%

Distribution of surplus quota: Surplus quota allocated regionally according to stock distribution (84% in the North and 16% in the South according to the 2019 stock assessment) and, within a region, allocated according to initial proportions.

Regional configuration: ME-NY and NJ-NC

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	4,500,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.8%	0.8%	0.8%	0.8%	0.8%
NH	0.5%	0.8%	0.8%	0.8%	0.8%	0.8%
MA	13.0%	28.3%	28.3%	28.3%	28.3%	28.3%
RI	11.0%	24.0%	24.0%	24.0%	24.0%	24.0%
CT	1.0%	2.2%	2.2%	2.2%	2.2%	2.2%
NY	7.0%	15.3%	15.3%	15.3%	15.3%	15.3%
NJ	20.0%	8.6%	8.6%	8.6%	8.6%	8.6%
DE	5.0%	2.1%	2.1%	2.1%	2.1%	2.1%
MD	11.0%	4.7%	4.7%	4.7%	4.7%	4.7%
VA	20.0%	8.6%	8.6%	8.6%	8.6%	8.6%
NC	11.0%	4.7%	4.7%	4.7%	4.7%	4.7%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	71.3%	71.3%	71.3%	71.3%	71.3%
South	67.0%	28.8%	28.8%	28.8%	28.8%	28.8%



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EXAMPLE 11

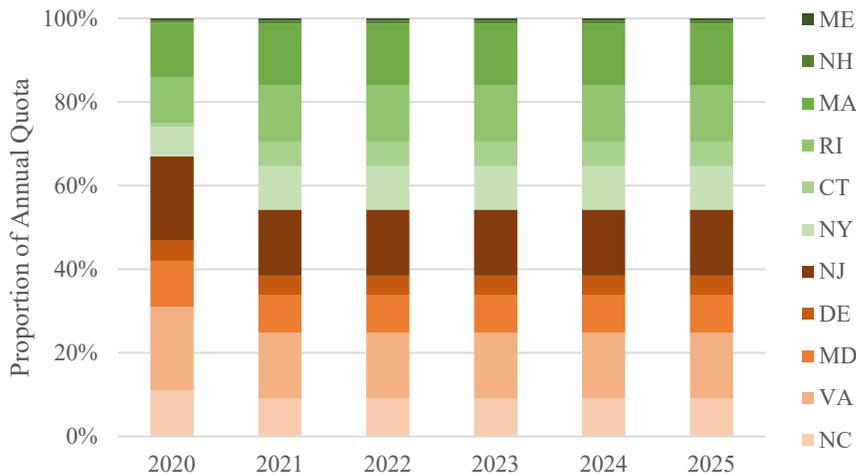
Base percentage: 75%

Distribution of surplus quota: Surplus quota allocated regionally according to stock distribution (84% in the North and 16% in the South according to the 2019 stock assessment) and, within a region, allocated equally to each state.

Regional configuration: ME-NY and NJ-NC

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	4,500,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%
NH	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%
MA	13.0%	14.9%	14.9%	14.9%	14.9%	14.9%
RI	11.0%	13.4%	13.4%	13.4%	13.4%	13.4%
CT	1.0%	5.9%	5.9%	5.9%	5.9%	5.9%
NY	7.0%	10.4%	10.4%	10.4%	10.4%	10.4%
NJ	20.0%	15.8%	15.8%	15.8%	15.8%	15.8%
DE	5.0%	4.6%	4.6%	4.6%	4.6%	4.6%
MD	11.0%	9.1%	9.1%	9.1%	9.1%	9.1%
VA	20.0%	15.8%	15.8%	15.8%	15.8%	15.8%
NC	11.0%	9.1%	9.1%	9.1%	9.1%	9.1%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	45.8%	45.8%	45.8%	45.8%	45.8%
South	67.0%	54.3%	54.3%	54.3%	54.3%	54.3%



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EXAMPLE 12

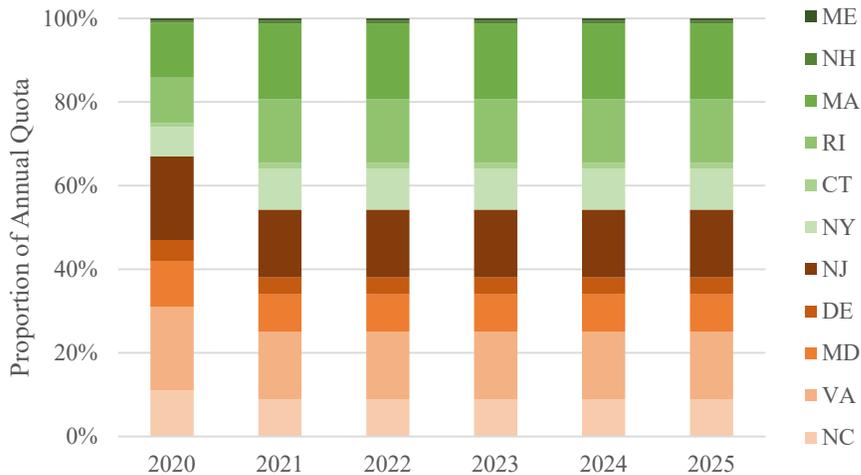
Base percentage: 75%

Distribution of surplus quota: Surplus quota allocated regionally according to stock distribution (84% in the North and 16% in the South according to the 2019 stock assessment) and, within a region, allocated according to initial proportions.

Regional configuration: ME-NY and NJ-NC

Year	2020	2021	2022	2023	2024	2025
Coastwide Quota	5,580,000	5,580,000	5,000,000	5,000,000	4,500,000	4,500,000

State	Annual % of Quota					
	2020	2021	2022	2023	2024	2025
ME	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%
NH	0.5%	0.6%	0.6%	0.6%	0.6%	0.6%
MA	13.0%	18.1%	18.1%	18.1%	18.1%	18.1%
RI	11.0%	15.3%	15.3%	15.3%	15.3%	15.3%
CT	1.0%	1.4%	1.4%	1.4%	1.4%	1.4%
NY	7.0%	9.8%	9.8%	9.8%	9.8%	9.8%
NJ	20.0%	16.2%	16.2%	16.2%	16.2%	16.2%
DE	5.0%	4.0%	4.0%	4.0%	4.0%	4.0%
MD	11.0%	8.9%	8.9%	8.9%	8.9%	8.9%
VA	20.0%	16.2%	16.2%	16.2%	16.2%	16.2%
NC	11.0%	8.9%	8.9%	8.9%	8.9%	8.9%
Total	100%	100%	100%	100%	100%	100%
North	33.0%	45.8%	45.8%	45.8%	45.8%	45.8%
South	67.0%	54.3%	54.3%	54.3%	54.3%	54.3%





Mid-Atlantic Fishery Management Council

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: January 15, 2021
To: Chris Moore, Executive Director
From: Julia Beaty, staff
Subject: Council Staff Recommendation for Black Sea Bass Commercial State Allocation Percentages

During their joint meeting in December 2020, the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission's (Commission's) Summer Flounder, Scup, and Black Sea Bass Management Board (Board) considered the Black Sea Bass Commercial State Allocation Amendment/Draft Addendum XXXIII for final action. They took final action on alternatives related to the inclusion of the commercial state allocations in both the Council and Commission Fishery Management Plans (FMPs), paybacks of state-level quota overages, and federal in-season closures.¹

During their joint meeting on February 1, 2021, the Council and Board plan to take final action on the alternatives in the amendment/addendum regarding the commercial state allocation percentages for black sea bass.

Council staff recommend the following combination of alternatives for modification of the commercial state allocation percentages. These alternatives are described in more detail below.

- **Alternative B:** Increase Connecticut's allocation from 1% to 5% (see details below).
- **Alternative F:** Percentage of coastwide quota distributed based on initial allocations
 - **Sub-Alternative F1-B:** Allocate 75% of the coastwide quota based on the initial allocations (after first accounting for Connecticut's increase to 5%).
 - **Sub-Alternative F2-B:** Allocate the remaining 25% based on the most recent regional biomass distribution information from the stock assessment.
 - **Sub-Alternative F3-B:** Further divide the regional allocation among states within a region in proportion to the initial allocations, except that Maine and New Hampshire would each receive 1% of the northern region quota. The initial allocations would account for the increase in Connecticut's allocation to 5%.
- **Sub-Alternative G2:** Define the regions as: 1) Maine through New York, 2) New Jersey, and 3) Delaware through North Carolina.

If this combination of alternatives is approved, the following steps would be followed to determine the state allocations in a given year. Note that the state allocation percentages would

¹ A summary of the December 2020 joint meeting is available here: <https://www.mafmc.org/briefing/december-2020>.

vary each time updated stock assessment information becomes available since 25% of the quota would always be distributed based on the most recent stock assessment information. Modifications in response to updated stock assessment information would be made through the specifications process.

Step 1: Increase Connecticut's allocation from 1% to 5% (i.e., alternative B). This would be achieved using the following approach:

- Leave New York and Delaware's allocations unchanged (for this step).
- Move 0.25% from Maine and 0.25% from New Hampshire to Connecticut.
- Move some allocation from Massachusetts (0.53%), Rhode Island (0.45%), New Jersey (0.81%), Maryland (0.45%), Virginia (0.81%), and North Carolina (0.45%) to Connecticut. The amount moved from each state is proportional to that state's current allocation percentages.

This results in the "initial" allocations shown in Table 1.

Step 2: Allocate 75% of the annual coastwide quota according to the initial allocations defined through Step 1 (i.e., Sub-alternative F1-B).

Step 3: Divide the remaining 25% of the coastwide quota into a northern component and a southern component based on the most recent regional biomass distribution information from the stock assessment (sub-alternative F2-B). This division would vary each time updated stock assessment information is available. For example, the 2019 Operational Stock Assessment estimated that 84% of the spawning stock biomass in 2018 was present in the northern region and 16% in the southern region, after accounting for a retrospective pattern adjustment. This would result in 21% of the total quota (i.e., 84% of 25%) being allocated to the northern states and 4% (i.e., 16% of 25%) to the southern states to account for recent biomass distribution.

To establish New Jersey as its own region, it would be treated as if half its initial allocation is associated with the northern region and half with the southern region (alternative G2).

Step 4: Further divide the regional allocations defined in step 3 among states within a region in proportion to the initial allocations (Step 1), except that Maine and New Hampshire would each receive 1% of the northern region quota (i.e., sub-alternative F3-B). As previously stated, the initial allocations would account for the increase in Connecticut's allocation to 5%. New Jersey's final allocation would be the sum of the component of their allocation that is associated with the northern region and the component associated with the southern region.

Final resulting allocations: The 25% of the total quota that is allocated based on regional biomass distribution would change each time updated stock assessment information is available; therefore, the final resulting state allocations would also change on a regular basis. These changes would be made through the specifications process. Table 1 shows an example of the final resulting state allocations under the most recent biomass distribution (i.e., 84% north and 16% south, after applying a retrospective pattern adjustment, according to the 2019 Operational Stock Assessment).

Rationale for Council staff recommendation for state quota allocation percentages: The staff recommendation seeks to better align the allocations with recent stock distribution while accounting for the historical dependence of the states on the commercial black sea bass fishery. For example, under the most recent biomass distribution, no state would lose more than 4.21% and no state except Connecticut would gain more than 2.10% of the total quota. This approach also seeks to address the unique position of Connecticut, which, like many states, has seen a

notable increase in availability of black sea bass, but is especially constrained by their current 1% allocation. It also addresses the unique position of New Jersey as a state that spans the boundary between the two regions used in the stock assessment. This approach allows the allocations to change in response to future distribution changes, helping to ensure that they continue to allow fair access to the fishery.

Table 1: Resulting state allocation percentages under Council staff recommendation and 2018 biomass distribution information.

State	Current allocations	"Initial allocations" (CT to 5% first)	Revised allocations under 2018 biomass distribution	Difference between current and revised allocations
ME	0.50%	0.25%	0.40%	-0.10%
NH	0.50%	0.25%	0.40%	-0.10%
MA	13.00%	12.47%	15.10%	2.10%
RI	11.00%	10.55%	12.78%	1.78%
CT	1.00%	5.00%	6.06%	5.06%
NY	7.00%	7.00%	8.48%	1.48%
NJ	20.00%	19.19%	19.52%	-0.48%
DE	5.00%	5.00%	4.11%	-0.89%
MD	11.00%	10.55%	8.68%	-2.32%
VA	20.00%	19.19%	15.79%	-4.21%
NC	11.00%	10.55%	8.68%	-2.32%
Total	100.00%	100.00%	100.00%	0.00%
Total percentage moved from NJ-NC to ME-NY under 2018 biomass distribution.				10.21%

From: Stuart Fries [<mailto:sfries@gafinsurance.com>]
Sent: Friday, January 15, 2021 4:34 PM
To: Comments <comments@asmfc.org>
Cc: 'bowgun2003@yahoo.com' <bowgun2003@yahoo.com>
Subject: [External] Summer Flounder discussion

I am an avid fisherman in the NY and NJ area...

I am aware of the limitation of the 4 fluke with a minimum of 19 inches each in New YORK
I am aware of the “ “ “ 3 “ “ “ “ “ 18 “ “ “ New JERSEY.

I fish on private boats, but very aware of the summer flounder being caught in the NY/NJ Area, and it is not unusual in this local area to catch 20 or 30 fish in a day, WITHOUT EVEN ONE KEEPER.

I feel terrible for the many patrons that love to fish and crowd the many party boats in this area.

I would like to see each of these people be able to take home at least ONE summer flounder, after they have been out all day, without any keepers. Perhaps, we could reduce the size limit to 16 or 17 inches for ONE summer flounder in NY, and we could even cut back the 4 fish limit to 3 fish.

Thank you.

Stuart Fries

Stuart Fries - , CIC - Vice President

Email: sfries@gafinsurance.com Direct #: (516) 837-1134 Fax #: 516-837-1200

Garber Atlas Fries and Associates - 3070 Lawson Blvd, Oceanside, NY 11572 - 516-837-1100

www.gafinsurance.com



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Atlantic States Marine Fisheries Commission

ISFMP Policy Board

February 1, 2021

10:45 -11:45 a.m.

and

February 4, 2021

1:45 - 4:15 pm

Webinar

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

February 1, 2021

1. Welcome/Call to Order (*P. Keliher*) 10:45 a.m.
2. Board Consent (*P. Keliher*) 10:45 a.m.
 - Approval of Agenda
 - Approval of Proceedings from October 2020
3. Public Comment 10:45 a.m.
4. Discuss Recreational Management Reform Initiative (*J. Beaty*) **Possible Action** 10:50 a.m.
This agenda item will be discussed jointly with the Mid-Atlantic Fishery Management Council (MAFMC)
5. Recess until Thursday, February 4 at 1:45 p.m. 11:45 a.m.

February 4, 2021

6. Public Comment 1:45 p.m.
7. Executive Committee Report (*P. Keliher*) 1:50 p.m.
8. Progress Update on the Risk and Uncertainty Policy (*J. McNamee*) 2:05 p.m.
 - Review Draft of the Risk and Uncertainty Policy
 - Discuss Steps to Consider Final Approval of the Policy
9. Review and Discuss 2020 Commissioner Survey Results (*D. Tompkins*) 2:35 p.m.
10. Review State Membership on Species Management Boards (*T. Kerns*) **Action** 2:55 p.m.
 - Review State Declared Species of Interest
 - Review Pennsylvania's Membership on the Atlantic Menhaden Management Board

This meeting will be held via webinar, click [here](#) for details.
Sustainable and Cooperative Management of Atlantic Coastal Fisheries

- | | |
|--|-----------|
| 11. Discuss Commission Process for Working on Recreational Reform Issues with the MAFMC (<i>T. Kerns</i>) | 3:25 p.m. |
| 12. Discuss Possible Reporting Programs to Capture Recreational Release Data (<i>T. Kerns</i>) | 3:40 p.m. |
| 13. Committee Reports Action <ul style="list-style-type: none">• Habitat Committee (<i>L. Havel</i>)• Artificial Reef Committee (<i>L. Havel</i>)• Atlantic Coast Fisheries Habitat Partnership (<i>L. Havel</i>) | 3:55 p.m. |
| 14. Review Noncompliance Findings (If Necessary) Action | 4:10 p.m. |
| 15. Other Business/Adjourn | 4:15 p.m. |

MEETING OVERVIEW

ISFMP Policy Board
Monday February 1, 2021
10:45 -11:45 a.m.
and
Thursday February 4, 2021
1:45 – 4:15 p.m.
Webinar

Chair: Pat Keliher (ME) Assumed Chairmanship: 10/19	Vice Chair: Spud Woodward (GA)	Previous Board Meeting: October 22, 2020
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, DC, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (19 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from October 22, 2020

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Update on Recreational Reform Initiative (10:50 -11:45 a.m.) Possible Action

Background

- The Council and the ASMFC’s Policy Board (Board) reviewed progress on the Recreational Management Reform Initiative and discussed next steps. After reviewing nine topics that were either recommended by the Recreational Management Reform Initiative Steering Committee or by stakeholders through scoping for two separate ongoing amendments, the Council and Board agreed to initiate a joint framework/addendum and a joint amendment to address several recreational issues. The framework/addendum will further develop and consider the following topics and management issues:
 - better incorporating MRIP uncertainty into the management process;
 - guidelines for maintaining status quo recreational management measures (i.e., bag, size, and season limits) from one year to the next;
 - a process for setting multi-year recreational management measures;
 - changes to the timing of the recommendation for federal waters recreational management measures; and

- a proposal put forward by six recreational organizations called a harvest control rule. The amendment would consider options for managing for-hire recreational fisheries separately from other recreational fishing modes (referred to as sector separation) and would also consider options related to recreational catch accounting such as private angler reporting and enhanced vessel trip report requirements for for-hire vessels.

Presentations

- Update on Recreational Reform Initiative (**Meeting Materials**) by J. Beaty

Possible Board Actions for Consideration

- Consider initiating a workgroup to

5. Recess until 1:45 p.m. on February 4

6. Executive Committee Report (1:50 -2:05 p.m.)

Background

- The Executive Committee will meet on February 3, 2021

Presentations

- P. Keliher will provide an update of the Committee’s work

Board action for consideration at this meeting

- none

7. Progress Update on the Risk and Uncertainty Policy (2:05-2:35 p.m.)

Background

- At the 2020 Summer Meeting, Commissioners supported the continued development of the draft Risk and Uncertainty Policy and Decision Tool.
- The Policy Board tasked the Risk and Uncertainty Policy Workgroup with further refining the criteria for the Risk and Uncertainty Decision Tool and updating the striped bass example.

Presentations

- J. McNamee will review changes to the draft Risk and Uncertainty Policy and potential next steps.

Board action for consideration at this meeting

- None

8. Review and Discuss 2020 Commissioner Survey Results (2:35-2:55 p.m.)

Background

- Commissioners completed a survey of Commission performance in 2020 (**Supplemental Materials**). The survey measures Commissioner’s opinions regarding the progress and actions of the Commission in 2020.

Presentations

- D. Tompkins will present the results of the 2020 Commissioner survey highlighting significant changes from the previous year.

Board discussion for consideration at this meeting

- Determine if any action is required based on the survey results

9. Review State Membership on Species Management Boards (2:55-3:25 p.m.) Action**Background**

- Each year states review their declared interest for Commission managed species. States and agencies have requested changes.
- Articles II, VIII, and XII of the ASMFC Compact address participation by certain states eligible for ASMFC fishery management activities, including Pennsylvania, generally requiring that such participation be limited to anadromous species found in those states' waters. Pennsylvania has been part of the Atlantic Menhaden Management Board since 2016. Because Atlantic Menhaden are not anadromous, the question arose whether it is proper for Pennsylvania to participate in the Menhaden Board.

Presentations

- T. Kerns will present requests for changes to the State Declared Species of Interest.
- R. Beal will present a review of Pennsylvania's membership on the Atlantic Menhaden Management Board

Board action for consideration at this meeting

- Consider changes to the State Declared Species of Interest

10. Discuss Commission Process for Working on Recreational Reform Issues with the MAFMC (3:25-3:40 p.m.)**Background**

- The MAFMC and the Commission have been working on a Recreational Management Reform Initiative for summer flounder, scup, black seas bass and bluefish.
- The Policy Board has been meeting with the MAFMC to discuss these issues

Presentations

- T. Kerns will present information on the Commission process for this issue

Board action for consideration at this meeting

- none

11. Discuss Possible Reporting Programs to Capture Recreational Release Data (3:40-3:55 p.m.)**Background**

- In a recent review of biological reporting requirements, the Bluefish Technical Committee noted the stock assessment recommendation to accurately characterizing the recreational release lengths is integral to the assessment and any improvement to the methodology used to collect these data is recommended.
- The TC discussed options for electronic reporting that could be used for collecting recreational angler release data to remove the need for a state to create a new data collection system with an ACCSP staff member. The TC recommended the Bluefish Board advance the importance of broadly collecting reliable recreational release length frequency data from all recreational species by asking the Policy Board to task

the ASC to work with the ACCSP to develop a comprehensive program for reporting released fish of all recreationally import species the Commission manages.

- The Bluefish Board had some concerns about the lack of specificity in the recommended task.

Presentations

- T. Kerns will present information current and developing applications that could address the collection of recreational release data.

Board action for consideration at this meeting

- None

12. Committee Reports (3:55-4:10 p.m.) Action

Background

- The Habitat Committee met in the Fall of 2020
- Concerns were raised by Habitat Committee members that the Army Core was considering changes to dredging windows. The Committee drafted a comment letter for dredging windows for the Commission to consider.
- The Artificial Reef Committee has updated the 1988 state artificial reef profiles
- In the Fall of 2020 the ACFHP Steering Committee met

Presentations

- L. Havel will present a summary of the HC fall meeting and the draft comment letter
- L. Havel will present the update of the state artificial reef profiles
- L. Havel will present an overview of ACFHP activities

Board action for consideration at this meeting

- Approval of the comment letter on dredging windows
- Approval of the state artificial reef profile update

8. Review Non-Compliance Findings, if Necessary Action

9. Other Business

10. Adjourn

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
ISFMP POLICY BOARD**

**Webinar
October 22, 2020**

These minutes are draft and subject to approval by the ISFMP Policy Board.
The Board will review the minutes during its next meeting.

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INDEX OF MOTIONS

1. **Approval of agenda** by Consent (Page 1).
2. **Approval of Proceedings of August 5, 2020 Webinar** by Consent (Page 1).
3. **Move to split the South Atlantic State/Federal Management Board into a Pelagic Board and a Sciaenid Board** (Page 6). Motion by Joe Cimino; second by Spud Woodward. Motion carried (Page 6).
4. **Move to approve the 2021 coastal shark specifications via an e-mail vote after NOAA Fisheries publishes the final rule for the 2021 Atlantic Shark Commercial fishing season** (Page 7). Motion by Chris Batsavage; second by Jim Estes. Motion carried (Page 7).
5. **Move to adjourn** by Consent (Page 12).

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ATTENDANCE

Board Members

Pat Keliher, ME (AA)
Cheri Patterson, NH (AA)
Ritchie White, NH (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Dan McKiernan, MA (AA)
Raymond Kane, MA (GA)
Jason McNamee, RI (AA)
David Borden, RI (GA)
Justin Davis, CT (AA)
Bill Hyatt, CT (GA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)
Emerson Hasbrouck, NY (GA)
Joe Cimino, NJ (AA)
Tom Fote, NJ (GA)
Adam Nowalsky, NJ, proxy for Asm. Houghtaling (LA)
Kris Kuhn, PA, proxy for T. Schaeffer (AA)

Loren Lustig, PA (GA)
John Clark, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Lynn Fegley, MD, proxy for B. Anderson (AA)
Russell Dize, MD (GA)
Phil Langley, MD, proxy for Del. Stein (LA)
Steve Bowman, VA (AA)
Steve Murphey, NC (AA)
Bill Gorham, NC, proxy for Rep. Steinberg (LA)
Mel Bell, SC, proxy for P. Maier (AA)
Doug Haymans, GA (AA)
Spud Woodward, GA (GA)
Jim Estes, FL, proxy for J. McCawley (AA)
Marty Gary, PRFC
Karen Abrams, NOAA
Mike Millard, USFWS, proxy for S. White

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Staff

Robert Beal
Toni Kerns
Kristen Anstead
Max Appelman
Pat Campfield
Dustin Colson Leaning
Chris Jacobs
Jeff Kipp
Heather Konell

Laura Leach
Savannah Lewis
Sarah Murray
Joe Myers
Marisa Powell
Caitlin Starks
Deke Tompkins
Geoff White

Guests

Pat Augustine, Coram, NY
Joey Ballenger, SC DNR
Alan Bianchi, NC DENR
Karyl Brewster-Geisz, NOAA
Jeff Brust, NC DENR
Mike Celestino, NJ DEP
Heather Corbett, NJ DEP
Jessica Daher, NJ DEP
Jamie Darrow, NJ DEP
Peter Fallon, Maine Stripers
Lynn Fegley, MD DNR
Cynthia Ferrio, NOAA
Dawn Franco, GA DNR
Lewis Gillingham, VMRC
Carol Hoffman, NYS DEC
Pete Himchak
Mike Luisi, MD DNR

Chip Lynch, NOAA
Shanna Madsen, VMRC
John Maniscalco, NYS DEC
Brandon Muffley, MAFMC
Allison Murphy, CBF
Ken Neill
Gerry O'Neill, Cape SeaFoods
Derek Orner, NOAA
Michael Pierdinock
Nicholas Popoff, FL FWS
Andrew Sinchuk, NYS DEC
Helen Takade-Heumacher, FL FWS
Beth Versak, MD DNR
Gregory Wojcik, CT DEP
Chris Wright, NOAA
Erik, Zlokovitz, MD DNR
Renee Zobel, NH FGD

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The Board will review the minutes during its next meeting.

Draft Proceedings of the ISFMP Policy Board Webinar
October 2020

The ISFMP Policy Board of the Atlantic States Marine Fisheries Commission convened via webinar; Thursday, October 22, 2020, and was called to order at 11:18 a.m. by Chair Patrick C. Keliher.

CALL TO ORDER

CHAIR PATRICK C. KELIHER: It is 11:18, I think I'll call the ISFMP Policy Board to order.

APPROVAL OF AGENDA

We'll jump right into the agenda. First on the agenda is the Board Consent of the agenda. Does anybody have any additions or deletions to the agenda, or anything they might like to add now under new business? Dan McKiernan.

MR. DANIEL MCKIERNAN: Thanks, Pat. At a previous meeting there was some conversations about ASMFC possibly hosting a welk symposium. I've had some communications with some of the folks down in the Mid-Atlantic, and if we could just talk about that briefly, about what role ASMFC could play in that or not, so maybe under Other Business.

CHAIR KELIHER: Yes, let's bring that up under Other Business, Dan. That would be good. Anybody else, in regards to any additions to the agenda?

MS. TONI KERNS: Pat, I know we've just brought this up, but there are three letters that the Board will need to address, two from the American Lobster Board and one from the Atlantic Striped Bass Board.

CHAIR KELIHER: Yes, just remind me when we get to the new business, Toni, and we'll make sure we go over those as well. I don't see any other hands going up. I will approve of the agenda by consensus, with the additions under new business.

APPROVAL OF PROCEEDINGS

CHAIR KELIHER: Approval of the proceedings from the August 2020 meeting. Any additions,

deletions, or questions about those proceeding notes?

Seeing no hands, those are approved by consensus.

PUBLIC COMMENT

CHAIR KELIHER: Item Number 3 is Public Comment. Are there any comments from the public to the Policy Board? Hearing none, seeing no hands, we'll move right along to the Chair's Report.

CHAIR'S REPORT

CHAIR KELIHER: I ask you all just to put your feet up, get a bowl of popcorn, this will take a couple minutes.

I would like to give kind of an overview of where we've been over the last year. As you look back over the past year, and try to characterize it in a word or a phrase. It's really been truly just an extraordinary year, and a year of first for both states, federal partners, and our stakeholders. The first time in over a hundred years that we as a nation and a global community have had to face a life-threatening pandemic that is yet to run its course. We've all had to change the way we live and work. The state and federal agencies have had to adapt their telecommuting policies, to allow for full time telecommuting. Large gatherings and celebrations have been postponed, and in-person meetings have shifted to meetings via webinar. Notably, it will be the first time in the Commission's 79-year history we will not be gathering in one of our members states to conduct the important fisheries business that we're dealing with today.

It is certainly my hope that we will be able to come together next October, and regain some sense of normalcy. Closer to home I witnessed the devastating effects on the pandemic to our marine fisheries across all sectors, and our state budgets and our revenue streams and/or our fishery dependent and independent monitoring activities.

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The Board will review the minutes during its next meeting.

Draft Proceedings of the ISFMP Policy Board Webinar
October 2020

The commercial fishing industry and dealers and processors, as well as for the for-hire businesses, have suffered greatly during the pandemic. The passage of the CARES Act has offered some relief in the form of \$300,000,000.00 divided amongst all the states around the Atlantic, Gulf, and Pacific coast.

Since April the Commission has worked closely with its member states and NOAA, to coordinate the development of state spend plans based on the state's preference, and the Commission is obviously assisting with distributing the funds to the affected stakeholders. To date spend plans have been approved for 11 of the 15 states that make up the Commission.

The much-needed money is beginning to get to the hands of the fishing industry. While aid to fishermen through the CARES Act is a step in the right direction, available funds are not sufficient to meet all of the needs of our coastal fishing communities, as they struggle to maintain their livelihoods and businesses.

As Congress deliberates on additional assistance to help reduce the financial impacts of COVID-19, I'll continue to work with my fellow Commissioners in urging our Congressional representatives to consider the impacts in fisheries and fishing communities, as part of any pending legislation.

While many state fisheries agencies have navigated budget cuts for several years, the pandemic and lack of revenue stream will take an even deeper cut to our budgets. This in turn will further constrain our abilities to perform the necessary fisheries management and monitoring activities. Luckily, my fellow state marine fisheries agency directors are highly resourceful.

We find ways to get to the greatest bang for the buck, and by seeking efficiencies, ways that we can all do business, and prioritizing management and monitoring activities for species with the greatest need. Some relief has

been provided in the forms of some additional funds from the Commission, since much of the Commission's meeting and travel budgets have gone unspent through this year.

The Commission's Executive Committee, composed primarily of state directors, has never been more engaged, with nearly weekly meetings that give us an opportunity to share our challenges and seek solutions. I have great faith in our ability to tackle the obstacles before us, and come out the other side even stronger and more resilient. The pandemic also impacted critical marine fisheries data collection programs. Recreational harvest data was not collected for several months, the full impact of which are still being calculated. Certainly, with the lack of recreational harvest estimates for 2020, it will hinder our ability to make informed decisions about fisheries performance and setting management measures for the year 2021 and beyond. Several fisheries independent surveys were also canceled this year, which will create data gaps in some long-standing surveys, and may have repercussions to stock assessments for years to come.

Assessing the issues posed by the data gaps will take concerted efforts of our science and technical staff. Given the challenge and level of accumulative years of experience of our technical staff, I have no doubt that they will find workable solutions to these issues. Let's talk about some of the positives though that have resulted from the responses to the pandemic.

First and foremost, we have found that we are stronger and more resilient than we believed ourselves to be. Staff at the Commission and within our states and federal agencies have quickly shifted to full time telecommuting, barely missing a beat and continuing the important work that we all do.

Small and large meetings were moved to webinars, and while there was a learning curve for those of us who are, say a bit technically

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The Board will review the minutes during its next meeting.

challenged, we have managed to succeed. I've been impressed with the ease with which we now meet by webinar. Don't get me wrong, it's no substitute for meeting in person, but we are productively using technology to discuss the issues and make management decisions.

We can't use this pandemic as an excuse not to make these important decisions or delay any actions. Over this past year we've accomplished some major tasks, and initiated some significant management actions. We completed benchmark stock assessments for Atlantic cobia, American shad and American lobster to guide our decision making on these three species. In August, the Menhaden Board approved the use of ecological reference points in the management of this as very important forage species.

Over ten years in the making, this is an important first step towards ecosystem-based fisheries management, and I am very proud of the work of all of the state and federal scientists and states that sustain the commitment to make this a reality. Recognizing the distribution and availability of fisheries resources are shifting, due to the change in water temperature, and historic allocations may no longer reflect the current conditions.

The states and our partners with the Mid-Atlantic Fishery Management Council are considering changes to state-by-state commercial allocations for black sea bass. Also, with the Council, we're exploring novel, new approaches to managing recreational fisheries for bluefish, summer flounder and scup, as well as black sea bass, and seek to address the access to the resource, and create more sustainability in management measures from year to year.

Lastly, we initiated a new plan amendment for striped bass. It's been 17 years since we've considered major revisions to the striped bass management program, and amending the plan will certainly be a major undertaking. While it's been an incredibly challenging year, there is much we can be grateful for, the dedication of

our hardworking staff succeed from a distance, our sustained commitment to one another to seek outcomes that are the best interest of the resource, while striving for equity in our decisions, and the force of character and determination exhibited by our fishing industry and our coastal communities, to make the best of the challenging times that we're in. I want to thank you all for your support you've given Spud and I over the last year, and I look forward to working with you in the years ahead.

With that I will conclude my remarks. If I was given these remarks before the election, I certainly would have promised a lobster in every pot. I hope you are all able to understand that Maine dialect. I should have told you there was a close caption button somewhere, but hopefully you understood what I was saying. With that, thank you very much. That concludes the Chair's report. I do have a hand. Oh, I saw a hand up but now the hand is down. I don't know who it is, it's just the initials J.G.

MR. JAMES J. GILMORE: Well Pat, I'm incognito again, it's Jim Gilmore. Thank you, and again I just wanted to, I think echo all the Commissioners that I think you're correct, and that the Commission staff has done an outstanding job above and beyond the call of duty, but you and Spud I think should get extra acknowledgement for the leadership during this time period.

I don't know how you pulled this off, but you've done an excellent job. I think when they put the optimism in the dictionary, they have to put ASMFC and leadership next to it, because I think everyone has done a great job. Just wanting to make one note on history on a negative thing, whatever, was that all of you who, you saw when Doug Grout was Chair a few years ago there was an annual report that was done, and part of our history ended in the last few weeks.

The Roosevelt Hotel, where the Commission had its first meeting, and actually we had the annual meeting in 2018, sadly has closed down because of the business impact from COVID.

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The Board will review the minutes during its next meeting.

Again, our history is changing, in addition to the challenges we have. I just wanted to let everybody know that, and hopefully we'll find a new venue in years to come, and that we'll all be coming out of this, and keep up the good work, Pat.

CHAIR KELIHER: Thank you, Jim, and I certainly couldn't do it without my Vice-Chair. Spud has been a rock through all of these. I mean, I think together we work incredibly well together, and obviously we couldn't do it without the support of all of the Commission staff. Thanks again to everybody involved.

EXECUTIVE COMMITTEE REPORT

CHAIR KELIHER: If I see no other hands, I'm going to move on to the next agenda item, which is the Executive Committee report. Yesterday, the Executive Committee had a very quick meeting. For those of you who are not aware, we have been meeting nearly weekly, if not biweekly, for oh several months now, as we've dealt with the pandemic.

Certainly, the CARES Act caused us to all come together and meet much more frequently. But these meetings have certainly been very beneficial. I know they have been beneficial to me, because hearing the other issues and concerns and knowing that a state is not in this alone during these challenging times, has been beneficial for me.

We yesterday reviewed the Administrative Oversight Committee Report, and considered the 2020 audit for the Commission. I'm very happy to report that there were no issues that were raised by the firm that did the audit of the Commission, and that was accepted by the Executive Committee. We then went on to discuss future annual meetings, and we hope we will be back on track. Just so everybody is aware, New Jersey will continue to hold a spot for the annual meeting in 2021. We'll move to North Carolina in 2022, Maryland in 2023, and Delaware in 2024.

We also discussed Pennsylvania's participation on the Atlantic Menhaden Board. As you recall there has been some discussion on this in the past, and we have brought it back to the attention of the Executive Committee to discuss the future of their participation. When it was first raised, the question of their participation was kind of in conflict with the charter, as it clearly said that both Pennsylvania and Vermont could sit on boards for anadromous species.

Since that time, we have moved in the direction of the use of ecological reference points, and that really kind of changes some of the dynamics with the Atlantic Menhaden Board. As such, we've had some very good conversations with the Commonwealth of Pennsylvania, as well as our legal team.

We are currently in the process of developing a memo. This memo will continue to be reviewed by the Executive Committee. The memo will then make it a recommendation to the full Commission, if there is a request for a change or if there is anything in regards to any precedent setting nature here.

Certainly, the issues around liability and the legal complexities of this are being taken into consideration, but there will be much more on that in future meetings. We also discussed the improvement to the public comment process. Tina Berger and others have been working on this. This is a work in progress.

Certainly, because of the pandemic and because of the challenges with the use of webinars, and I think the fact that this group is working right now, and finding ways and thinking about ways to improve communications with both the public, and with our advisory panel process is really important. I think we'll be able to report something back out from that committee at the winter meeting.

Lastly, under Other Business. Rhode Island addressed the issue of staffing of the current Law Enforcement Committee meeting. Just so

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everybody is aware, our Executive Director will be working on finding new staff support for the Law Enforcement Committee. There was a very brief update on the CARES Act. I things are moving well there as well, and then there has been some redistribution of the ACFCMA funds.

Every state will receive 48K to help offset some of the budget impacts, and then there will be some additional money for a cobia plan down for the South Atlantic states, as well as the Striped Bass Tagging Study. That concludes my report of the Executive Committee. I'll ask Bob Beal if I missed anything. Did I miss anything in my quick note taking there, Bob?

EXECUTIVE DIRECTOR ROBERT E. BEAL: No, I think you got it all, Pat.

CHAIR KELIHER: Great, and I appreciate that. Any questions regarding the Executive Committees work? Seeing no hands. Item Number 6 is a Lunch Break. Since it is 11:30, if there are no objections, what I would like to do is kind of power through the agenda, make sure we have time to deal with the new business.

But I think we can probably get through these next several agenda items, and deal with lunch after we conclude the annual meeting. Any objections to that approach? Hearing none, we will go then to Item Number 7, which is Consider Dividing the South Atlantic and the Federal Fisheries Management Boards. Toni Kerns, you're up.

**CONSIDER DIVIDING THE SOUTH ATLANTIC
AND FEDERAL FISHERIES
MANAGEMENT BOARDS**

MS. KERNS: In your briefing materials there is a memo from me regarding splitting the South Atlantic Board. I did not prepare a PowerPoint, since a lot of the information in there that I think folks would want to look at is the landings, and those graphs look much too small to see. But the South Atlantic Board is responsible for management of seven of the Commission's species.

Two of those species in the time that I have set at the Commission have come under complete FMP management by the Commission. They were previously under the South Atlantic Council, those are red drum and Atlantic cobia, and then we still have the five other species that we've been managing over time, including spot, Spanish mackerel, black drum, Atlantic croaker, and spotted sea trout.

The Board is made up of the states from Florida to New York, but different states have declared interest in the different species of the Board. An example, New York to Florida has a declared interest in Spanish mackerel, and New Jersey to Florida has an interest in croaker. Depending on the species that are being discussed, several states on the Board would have downtime until the species that they are interested in are up on the agenda.

We are suggesting to split this management board for several reasons into two pieces. The first grouping would be for Atlantic cobia and Spanish mackerel. We would call this a coastal pelagics board, and then all the other species would fall into a sciaenid board. This recommendation is coming in order to make the best use of the Commissioner's time at these meetings.

The South Atlantic Board have gotten longer and longer, as we add more and more species. Those states that are on the outer edges of the management board may not be wanting to participate in some of the species, and so therefore we could save some of those Commissioners time, by splitting this Board into the pelagics and the sciaenid board. In addition, as I said before, these meetings are getting longer and longer, and it just helps to break up the timeframe in which the Board has to sit at the table and discuss the species.

Then lastly is on the administrative side for staff time. It might make it easier for us as we divide staff workload up into different parts, or into the different species, that we have the ability to split these species by these boards, in order to

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better allocate staff time to different management boards. That is my presentation to the Board. Sorry, Pat, one thing that I didn't mention is that in particular for Atlantic cobia, as we see this species expand its range northward, we're seeing additional northern states that want to participate in the Cobia Board, and so this goes along with the argument that the states on the outer range of these species may not want to have to participate in some of the more southern focus species. That is all.

CHAIR KELIHER: Great, thank you, Toni. Any questions for Toni? I would remind the Policy Board that we do need to take action on this if we want to make a change. Bob Beal.

EXECUTIVE DIRECTOR BEAL: Not a question for Toni, but I'm not sure if she hit this point or not. I think one of the important things with our South Atlantic Board has always been the state/federal nature of that Board, and we've had obviously the Services are allowed to be a part of that. But we've also had a voting seat for the South Atlantic Council. I think, you know there obviously is a link between ASMFC and the South Atlantic Council Spanish mackerel.

We both maintain FMPs, but there is still a cobia link as well. Some of the other southern species that will be part of the sciaenid board may be of importance to the South Atlantic Council. I would suggest, if we do split the South Atlantic Board into two pieces, it's probably worth extending an invitation to the South Atlantic Council, to see if they want to serve on both of those, or one or neither.

CHAIR KELIHER: Okay great, thanks for that, Bob. Pat Geer.

MR. PAT GEER: Yes, I just have a real quick question about, are we going to address the Omnibus FMP for spot, Spanish mackerel and spotted sea trout? Are we going to continue to have that, or eventually do we plan on splitting those up into separate management plans?

MS. KERNS: Pat, I can, well both Pats, I can respond to the other one.

CHAIR KELIHER: Yes, please, Toni.

MS. KERNS: Pat, we would be able to carry on, even though they were all in the omnibus for now, and when Spanish mackerel, which we anticipate will have management action after its stock assessment, that I believe will be completed at the beginning of 2022. It will be presented to the Board in the beginning of 2022.

But by the time all of the SEDAR work is done. Then we'll be able to split Spanish mackerel out of that omnibus. Before that we created the omnibus. Each of those three species have their own individual FMP, so just like we brought them all together, we can break them apart.

CHAIR KELIHER: Any other questions for Toni on this issue? Is there interest in having somebody make a motion to divide these two bodies? Joe Cimino.

MR. JOE CIMINO: I'm actually kind of surprised it was so quiet, but yes. I do have an interest; **I would make the motion to split cobia and Spanish mackerel into its own board.** I thought either Pat Geer or Lynn would have suggested it. After, you know a couple years of meetings, I think they were ready to throw five-hour energy drinks around to people, to get us through the South Atlantic Board as it is. We've got some tough decisions with cobia coming, and northern states with interest. As Toni mentioned, we're going to have to deal with you know the commercial Spanish mackerel fishery north of North Carolina very soon. For those reasons I think this is an important motion.

CHAIR KELIHER: Great, Joe does that capture your motion on the board?

MR. CIMINO: Yes.

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CHAIR KELIHER: Spud, is that a second?

MR. A.G. "SPUD" WOODWARD: That's a second, Pat, yes.

CHAIR KELIHER: We have a motion to split the South Atlantic State/Federal Management Board into a Pelagic Board and a Sciaenid Board. Motion by Joe Cimino, seconded by Spud Woodward. Is there any, Joe, do you want to give any more justification, or are you all set?

MR. CIMINO: No, that was it, thank you.

CHAIR KELIHER: Is there any additional comments or questions on the motion? Seeing no hands, is there any objection to the motion? **Seeing no hands, the motion passes by consensus.** Great, thank you.

SET THE 2021 COASTAL SHARKS FISHERY SPECIFICATIONS

CHAIR KELIHER: We will move right along to Item Number 8, which is Set the 2021 Coastal Sharks Fishery Specifications, and Toni, you're back up.

MS. KERNS: Normally we would have a Coastal Sharks Management Board to take care of such actions, but this was the only issue that needed to be addressed, and so in the interest of time we decided to bring this up at the Policy Board meeting. Each year NOAA Fisheries puts out annual specifications for Atlantic coastal shark regulations. Those regulations do not come out in a final rule until later on in the year. The management board typically agrees via motion to set the specification via e-mail vote.

We currently do have a proposed rule that is out for these regulations, and NOAA Fisheries is proposing a January 1 start date for all shark management groups, and is proposing an initial 36 shark possession limit for large coastal and hammerhead management group, with the possibility of in-season adjustment. What we're looking for today is an agreement by the Board

to set the 2021 coastal shark specification via an e-mail vote. That's all I have, Mr. Chair.

CHAIR KELIHER: Any questions of Toni? We do need to make a final action on this. Is there a motion? Chris Batsavage.

MR. CHRIS BATSAVAGE: Yes, I would like to make a motion. I move to approve the 2021 coastal shark specifications via an e-mail vote after NOAA Fisheries publishes the final rule for the 2021 Atlantic Shark Commercial fishing season.

CHAIR KELIHER: Thank you, Chris. We've got several hands up, Jim Estes, are you seconding that motion?

MR. JIM ESTES: Yes sir, I am.

CHAIR KELIHER: We have a motion on the board, are there any questions on the motion? No questions, no comments. I'm going to read the motion into the record. Move to approve the 2021 Coastal Sharks specifications by an e-mail vote after NOAA Fisheries publishes the final rule for the 2021 Atlantic Shark Commercial Fishing season.

Motion by Mr. Batsavage, seconded by Mr. Estes. Are there any objections to the motion? Hearing and seeing no objections, the motion passes by consensus.

REVIEW NONCOMPLIANCE FINDINGS

CHAIR KELIHER: Thank you very much, and Item Number 9 is Review of Noncompliance Findings, and as I said earlier, luckily, we have none.

OTHER BUSINESS

CHAIR KELIHER: That moves us into Other Business. Dan McKiernan, do you want to bring up the welk issue?

MR. MCKIERNAN: Yes, thank you. Actually, the two issues that have come before the Lobster Board regarding letters that I think the Board has asked the Commission to send. I assume

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this is the time to discuss that, under Other Business?

CHAIR KELIHER: Yes, we need to discuss, there is both the Lobster Board and the Striped Bass Board have recommended letters to the Policy Board, so why don't we deal with welk first, and then go right into the letters.

MR. McKIERNAN: Yes, we can fly through welk. I just want to bring it to the Commission's attention that back in the winter meeting folks were coming up with some grand ideas about cooperative sharing of information on welk fisheries, because managing welk fisheries in state waters was becoming more and more challenging. At the time there was some discussion about a possible interstate plan, but I think most folks are balking at that.

But one of the thoughts was to hold a symposium with states with welks fisheries to contribute to some science and management sharing, and I've been told this morning through some e-mails that the Virginia Sea Grant folks are interested in hosting that. I don't think it needs to be necessarily a Commission initiative, but the Commission does give us a chance as a group of cooperating states to come together.

In fact, at the previous discussion, of course as we talk about coming together, we all think of the dollar signs, what does it cost? Since then Zoom has happened, and so I would really urge the folks in Virginia, if that's where it's going to take place, to put that together, and certainly in Massachusetts we would be anxious to contribute to that as well. I don't know if we want to have a little conversation about that, but it doesn't need to be a Commission's commitment at this point.

CHAIR KELIHER: I'm assuming thought, Dan, you're looking for some kind of coordination support from the Commission as well?

MR. McKIERNAN: Yes.

CHAIR KELIHER: Okay, great. I've got three hands up, Pat Geer, Lynn Fegley, and then Tom Fote, so go ahead, Pat.

MR. GEER: I talked to Bob Fisher today, who works at VIMS and Sea Grant, and he is very excited about doing this. He said that they will be able to come up with funding if we do have a face to face workshop, and that he will take the lead on the issue. You know given the circumstances; I think things just kind of dropped through the cracks a little bit. We were aggressively pursuing this after the February Commission meeting.

All the states provide names of contact folks that would sit on this workgroup, and you know Bob is excited to get going on this again. We'll forward it on to him, and keep him in the loop, and we'll get moving on this. It seems like Virginia Sea Grant is very interested in taking the complete lead on this, and I would assume that ASMFCs interest in this is just whether or not they want to have somebody attend the workshops.

CHAIR KELIHER: Yes, thanks Pat, that is good news that they are willing to help coordinate that. Lynn Fegley.

MS. LYNN FEGLEY: I really think that Pat just said pretty much exactly what I was going to say. This is going to be a really worthwhile conversation. There is lots of new science and lots of really interested stakeholder if you have concerns. But I think it would actually benefit Commission staff at some point to attend, you know maybe if somebody like a Pat Campfield, just to keep sort of an eye on the radar. But I would just support what Pat said, and we should work together to come up with a good agenda for the gathering, thanks.

CHAIR KELIHER: Great, thanks, Lynn. Tom Fote.

MR. THOMAS P. FOTE: I'm just basically looking at the history of what we do and how we basically handle certain species. If I remember right, the reason we don't do things like welks

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and blue crabs, is because they are in state, they are not interstate. I'm wondering if that still applies on shellfish. I mean one of the old reasons we didn't do it, because we were getting most of the money to manage fisheries way back when from the Wild Grow Funds, and they wouldn't allow for shellfish management. But I don't know how we've changed over the years.

CHAIR KELIHER: Thanks for that, Tom, and I'll let Bob chime in if he would like. But I think from my standpoint, since we're not looking at the development of an FMP, and only trying to help coordinate amongst our state partners, which seems to be a small, non-burdensome role that the Commission could take. But Bob, do you have any comments you want to make on that?

EXECUTIVE DIRECTOR BEAL: No, I agree, Pat. As of now anyway, there is no push for interstate fishery management plan, this is just information sharing session on the current state of science, as well as management programs. I think we can help out, and send someone to the workshop, or have them link to the workshop, whatever the case is, you know with our current resources, without a problem at all.

CHAIR KELIHER: Great. Anything else on the welk issue? I don't think there is any action that needs to be taken here. Sounds like with Virginia Sea Grant taking the lead, they could just coordinate with the Commission to help communicate amongst all the states, to see who wants to attend. I think we're pretty clear what the next steps are. Let's move right on to the letters. Dan, since you were teed up, why don't we start with the Lobster Board and the letters that were recommended from the Lobster Board to the ISFMP Policy Board.

MR. McKIERNAN: Okay thank you, Pat. The first has to do with the most recent approved lobster addendum, Addendum XXVI, which was approved a few years ago, and the spirit of that was to improve data collection in the lobster fishery. At the same time NOAA Fisheries is also

taking on more data collection for their federal lobster permit holders.

There has been a series of weekly calls posted by ACCSP, and they have been very productive about how to make sure that these data are all compatible. It's the consensus coming out of the last meeting that it would be appropriate to ask NOAA Fisheries to collect certain parameters that will be consistent with the way the parameters are being collected at the state level.

One of the biggest challenges for our state lobster data gatherers is not just to manage their own data, but to then grab what's available through the federal system, and force it into a new format, to make it as compatible as possible. It is the consensus of the group to request that NOAA Fisheries make changes for certain data elements going forward, to ensure compatibility and data usefulness.

That is for each effort trap hauls, traps in the water, buoy lines, and traps per trawl. Then the overall numbers of buoy lines in the water as well. These are parameters that are going to be very valuable for not only the Technical Committee conducting stock assessments, but also the Large Whale Take Reduction Plan analysts at NOAA, and their contractors, and of course going forward, as we've tried to resolve ocean planning challenges with offshore wind development.

These are also going to be really, really useful parameters, and we need to collect them in a way that is compatible between the federal and the state system. I don't know, Toni, you have been very helpful in helping us put this ask together. Does that cover it as you see it?

MS. KERNS: Yes, Dan, thank you.

CHAIR KELIHER: Does anybody have any questions of Dan or Toni regarding that issue, or the letter? Toni, do you need a motion on this, or can we just do this by consensus? It's pretty clear on the record.

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MS. KERNS: Consensus is just fine, Pat.

CHAIR KELIHER: As long as there is no objection, then the Commission will send a letter. Seeing no objection, perfect. **The** Commission will send a letter on the data needs. Dan, do you want to bring up the second one?

MR. MCKIERNAN: Yes, the second one concerns the Jonah crab management plan, and in the Plan Review Team's report, which was brought before the Board. There was a concern about unimplemented Jonah crab regulations in the state of New York, particularly regulations that limit the directed trap fishery to lobster permit holders only, and a thousand crab limit.

These issues were raised in '18 and '19, but haven't been addressed yet. Our recommendation is to just send the state of New York a friendly reminder, requesting them to adopt those as codified rules. We understand from the reports that it appears that the spirit of those rules is being upheld, but the plan does require rules to be enacted to come into compliance.

CHAIR KELIHER: Okay thanks for that, Dan. I just want to make sure that it's clear that this is not a noncompliance finding, we're just hoping to give actually some leverage to New York, to help with their legislature. Maureen Davidson.

MS. MAUREEN DAVIDSON: That's exactly what it is, that we have not been able to get our legislature to rule on that particular aspect of the Jonah crab management. However, also, so we're trying to see if we can't get them to move on it. Then we're also seeing if there is any way that we might be able to do this through regulation.

Sort of a convoluted but alternative path that we are currently seeing if we're going to be allowed to do. We appreciate the patience on the part of the Lobster Board and the Commission, as we are really trying to work with our state legislators on moving forward,

and come in compliance with the FMP. Thank you.

CHAIR KELIHER: Great, thank you, Maureen. Any other questions as it pertains to this particular letter? Seeing no other hands, is there any objections to sending this letter to New York? Hearing no objections, that letter will be sent. Thank you very much for that. The last letter is around striped bass and striped bass regulations. David Borden, are you on?

MR. DAVID V. BORDEN: Yes sir.

CHAIR KELIHER: Would you like to describe the letters that the Striped Bass Management Board was considering?

MR. BORDEN: Certainly. The Striped Bass Board took up Addendum VI yesterday, and basically approved it, with the exception, which is the circle hook requirement. They basically approved all of the state implementation plans, with the exception of Mass and Maine. There are a number of comments that it will be reflected in the record on what some of the concerns were, and the Board ultimately took the position of approving the Addendum, with the exception of those two.

I suggest it is a formality that we send a letter to those two states, and ask them to revise their regulations. Both of the states have offered to do that, to revise regulations, but I wanted to be clear this is not a traditional noncompliance finding, it's simply a letter that each of those states can use internally, when they go back to their regulatory process (fade). I don't think it requires a normal motion at this level, unless we have objections, Mr. Chairman.

CHAIR KELIHER: Thank you, David, for that description. As far as the state of Maine is concerned, I mean it's pretty clear that the exemption for tube worms did not pass. We will be able to implement rulemaking, in order to have that in place prior to the next fishing season. You know we are a forest product state. We do make a lot of paper up here, so

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we always love it when people use paper and send us letters. But I don't think it's really required, unless the Policy Board believes so. I don't know how Mass feels about the need of a letter either. Dan, do you have a comment?

MR. McKIERNAN: Yes, I don't think we need a letter.

CHAIR KELIHER: With Maine and Mass not worrying about receiving the letter, and being able to move forward, I see no need for Commission staff to spend time on the letter. Unless there are no objections, we'll move forward with the paperless approach. Dennis Abbott.

MR. DENNIS ABBOTT: Will the Commonwealth of Massachusetts and the state of Maine report back to the Commission that they've taken appropriate action?

CHAIR KELIHER: We certainly would do that in our compliance reports.

MR. McKIERNAN: Yes, Dennis, I'll be taking it to our Marine Fisheries Advisory Commission at their next meeting, and I'll report back after that.

CHAIR KELIHER: Are there any other questions of comments on the striped bass letter or no letters? Seeing no hands, is there any other business to be brought before the Policy Board?

MS. KERNS: Pat, I have one other thing.

CHAIR KELIHER: Toni.

MS. KERNS: I just wanted to update the Policy Board on an issue that came to our attention this morning. The Horseshoe Crab Board reviewed the FMP review for this year, and in that FMP review it provided estimates for the biomedical harvest and the associated mortality with that harvest. A state has sent us a new compliance report that has updated information on their biomedical harvest, which would lower the total coastwide harvest.

I just wanted to let the Board know to look out in their e-mail for a revised FMP review, with the corrections that we received from the state. Due to data confidentiality reasons, we're not going to be able to tell you what state gave us that correction, but just to let you know that that is coming, and we will share that revised report with the associated committees as well, in addition to the Board.

CHAIR KELIHER: Any questions for Toni on that issue? Seeing no hands. Toni, are you going to just report back to us on that issue, or do you need any action here, or this just an FYI?

MS. KERNS: It was just an FYI. I know that the increase in the biomedical harvest raised some eyebrows from folks, and so I just wanted to point it out that that number will be lower, and to be on the lookout for a new FMP reveal.

CHAIR KELIHER: Great, okay, thank you, Toni. If no questions, is there any other business to be brought before the ISFMP Policy Board?

VICE-CHAIR COMMENTS

CHAIR KELIHER: Hearing no other business, let's give my Vice-Chair an opportunity to make any comments if he would like.

MR. WOODWARD: Thank you, Pat, I just wanted to express my appreciation to all the Commissioners and all the other folks from the states and the delegations, and also all the staff for making the annual meeting the best it can be, given the constraints we've been operating under.

I think all of us hope that this was a one and done, and that next year we will be together, hopefully sooner than later in 2021. I appreciate your support, Pat, and your leadership, and that of Bob. I think sometimes hard times bring out the best in us, and I certainly appreciate the support, being reelected for Vice-Chair, and I'll do my best to keep us moving in a positive direction. Thank you.

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CHAIR KELIHER: Great, thanks, Spud. Bob Beal, any comments before we adjourn the annual meeting?

EXECUTIVE DIRECTOR BEAL: No, other than I wish I could have seen you all in public. For whatever reason I'm more well-rested after this annual meeting than most of them. I guess I sleep better at home. But no, travel safe home everybody.

CHAIR KELIHER: Thank you! I would want to echo those comments of both the Vice-Chair and our Director. I appreciate everybody's time and attention. We've had a lot of conversations at different Executive Committee meetings about the concerns about how we move forward through this web-based approach. I think we are making the best of it, and I appreciate everybody that is making the webinar successful. With that, I thank you very much. A motion to adjourn our annual meeting would be in order. Tom Fote.

ADJOURNMENT

MR. FOTE: I'll make a motion to adjourn, with one stipulation that New Jersey is looking forward to next year, all of us being in person, having a great fishing contest, and getting a lot of business done in New Jersey next year.

CHAIR KELIHER: Motion to adjourn, and looking forward to seeing each other next year in person by Tom Fote. Second by Mel Bell. Any objections to the motion to adjourn? Hearing no objection, seeing no objections, this concludes the Atlantic States Marine Fisheries Commission's Annual Meeting. Thank you very much everybody!

(Whereupon the meeting adjourned at 12:08
p.m. on October 22, 2020.)



Mid-Atlantic Fishery Management Council

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: January 15, 2021
To: Chris Moore, Executive Director
From: Julia Beaty, staff
Subject: Next steps for Recreational Reform Initiative Framework/Addendum and Amendment

Introduction

The Mid-Atlantic Fisheries Management Council (Council) and the Atlantic States Marine Fisheries Commission (Commission) have discussed improvements to management of jointly managed recreational fisheries since 2018. In 2019 they formed a joint steering committee to develop strategies to increase management flexibility and stability in recreational management measures for summer flounder, scup, black sea bass, and bluefish.

In October 2020, the Council and the Commission's Policy Board passed the following motion initiating two management actions to address several prioritized topics associated with the Recreational Reform Initiative:

Move to initiate a joint framework/addendum to address the following topics for summer flounder, scup, black sea bass, and bluefish, as discussed today:

- *Better incorporate MRIP uncertainty into management*
- *Develop guidelines for maintaining status quo measures*
- *Develop a process for setting multi-year measures*
- *Consider changes to the timing of federal waters measures recommendations*
- *Harvest control rule*

and to also initiate an amendment to address recreational sector separation and recreational catch accounting such that scoping for the amendment would be conducted during the development of the framework/addendum.

Each topic is described in more detail on pages 6-18. Note that "better incorporate MRIP uncertainty into management" includes three specific topics, as described in more detail later in this document.

During the February 2021 joint meeting, the Council and Policy Board will discuss next steps for these actions, including their priority level compared to other ongoing actions for these four species. As an immediate next step, staff recommend formation of a working group to further develop the topics listed above under the framework/addendum (including those that may be

moved to a technical guidance document) prior to the next joint meeting of the Council and Policy Board. The working group could be tasked with further evaluating the following:

- Compliance of prioritized topics with Magnuson-Stevens Fishery Conservation and Management Act requirements. For example, can multi-year management measures and the Harvest Control Rule comply with the requirement for annual evaluation of catch limit overages?
- Which topics currently in the framework/addendum would not require changes to the Fishery Management Plans (FMPs) and therefore could instead be accomplished through a technical guidance document? A staff recommendation for technical guidance document topics is summarized below; however, additional consideration is needed regarding which topics may warrant consideration of changes to the accountability measures (AMs) or other parts of the FMPs and therefore would require a framework/addendum.
- If a wholesale change in management such as the Harvest Control Rule is identified as the highest priority for the Council and Policy Board, would this eliminate the need for some of the other prioritized topics? If so, should some topics not be further developed?
- Plans for further technical analysis and development of alternatives.

Working group membership could include Council, Commission, and Greater Atlantic Regional Fisheries Office (GARFO) staff and leadership, as well as additional individuals with expertise in Magnuson Act requirements, methodologies used by the Marine Recreational Information Program (MRIP), and federal and state management of these recreational fisheries.

During the next joint meeting of the Council and Policy Board, potentially in May 2021, the two groups could review progress made by the working group and further refine priorities and the planned timelines for completion of these actions.

To assist in the discussion in February, this document provides rationale for developing some topics through a technical guidance document rather than a framework/addendum, as well as example timelines and background information on all topics prioritized in October 2020.

Types of Management Actions

Staff recommend that some of the prioritized topics be developed through a technical guidance document, rather than a framework/addendum. Some topics are highly technical in nature and may not require changes to the FMPs, depending on the specific changes desired by the Council and Board. For example, guidelines for appropriate use of data could be adopted through a technical guidance document. However, a framework/addendum may be required if specific management responses to the data are considered, or if changes in how the data are used require changes to the AMs. Table 1 shows an example of which topics could potentially be addressed through a technical guidance document; however, this grouping may need to be revised after further evaluation of these topics to determine which topics may require or warrant a change to the FMPs. This grouping could be revisited during the next joint meeting of the Council and Policy Board.

Table 1: Example grouping of the prioritized Recreational Reform Initiative topics into three types of management actions. The grouping of the technical guidance document and framework/addendum topics may be revisited after further consideration of which topics may require or warrant a change to the FMPs.

Technical Guidance Document	Framework/Addendum	Amendment
<ul style="list-style-type: none"> • Develop a process for identifying and smoothing outlier MRIP estimates.* • Evaluate the pros and cons of using preliminary current year MRIP data.* • Develop guidelines for maintaining status quo measures. 	<ul style="list-style-type: none"> • Envelope of uncertainty approach for determining if changes to recreational management measures are needed.* • Develop process for setting multi-year recreational management measures. • Consider changes to the timing of recommending federal waters measures. • Harvest Control Rule proposal put forward by 6 recreational organizations. 	<ul style="list-style-type: none"> • Recreational sector separation. • Recreational catch accounting.

*When the Council and Board passed the motion on page 1, it was understood that “better incorporate MRIP uncertainty into management” addressed these topics.

Draft Timeline for Next Steps

Table 2 lists draft timelines for development of a technical guidance document, a joint framework/addendum, and a joint amendment to address the prioritized Recreational Reform Initiative topics. These timelines assume the Council and Board will develop some topics through a technical guidance document, rather than a joint framework/addendum. If this recommendation is not approved, then those topics would be developed through the framework/addendum and the timeline for the framework/addendum is likely to extend beyond that listed below.

The timelines in Table 2 also assume that the technical guidance document and framework/addendum are high priorities for the Council and Board over the next few years and the Recreational Reform amendment is a lower priority. The timeline for the amendment will depend on the refined scope of the action, which will be determined after the scoping period.

The timelines take into consideration other ongoing priority actions for these species and are feasible for Council staff. However, Commission and GARFO staff have raised concerns about their ability to meet these timelines given staff capacity and other priority actions for these four species.

Table 2: Draft timeline for next steps for development of a technical guidance document, joint framework/addendum, and joint amendment to address all prioritized Recreational Reform Initiative topics. These timelines assume the Council and Board develop some topics in a technical guidance document, rather than a framework/addendum, otherwise the timeline for the framework/addendum will likely be longer than that listed below. Bold text indicates a potential joint meeting. All dates are subject to change.

Date	Technical Guidance Document	Framework/Addendum	Amendment¹
Feb 2021	Council/Board discuss next steps. Working group formed to assist with analysis and development of topics.	Council/Board discuss next steps. Working group formed to assist with analysis and development of alternatives.	Council/Board discuss next steps and priority level.
Mar-Apr 2021	Working group further develops and analyzes topics.	Working group further develops and analyzes topics, considers plan for scoping. ²	--
May 2021	Council/Board review working group progress, refine list of topics in technical guidance document if necessary.	Council/Board review working group progress and refine list of topics in framework/addendum if necessary.	Council/Board review priority level for this action. FMAT/PDT formed (assuming action remains a priority.)
Jun-July 2021	Further technical development.	FMAT/PDT develops draft scoping document. ²	FMAT/PDT develops draft scoping document.
Aug 2021	Council/Board review progress.	Council/Board approve scoping document. ²	Council/Board approve scoping document and scoping plan.
Sep-Oct 2021	Working group completes development of draft document.	Scoping. ²	Scoping.

¹ This timeline assumes this amendment remains a high priority after further Council and Policy Board discussion in February and May 2021. If this amendment is not a high priority, the timeline would be extended.

² The Council and Board do not typically hold scoping periods for frameworks and addenda; however, the Harvest Control Rule, as proposed, requires extensive stakeholder input. See pages 10-11 for details. Specific management alternatives would not be developed prior to scoping. The intent of scoping would be to gather public input to help refine the scope of the action and to inform development of the alternatives, with an emphasis on the Harvest Control Rule. Additional public input on all alternatives in the framework/addendum will be sought after the complete range of alternatives is finalized.

Date	Technical Guidance Document	Framework/Addendum	Amendment¹
Nov 2021	MC considers for use in development of 2022 recreational measures, pending Council/Board approval in December.	FMAT/PDT reviews scoping comments and provides initial recommendations for types of alternatives to be further developed.	FMAT/PDT reviews scoping comments and provides initial recommendations for types of alternatives to be further developed.
Dec 2021	Council/Board consider approval of draft document.	Council/Board review scoping comments and FMAT/PDT recommendations; refine scope of action.	Council/Board review scoping comments and refine scope of action.
Early 2022	TC considers in development of state waters 2022 rec. measures.	FMAT/PDT further develops range of alternatives. AP meeting to review FMAT/PDT progress and recommend final range of alternatives.	FMAT/PDT develops alternatives.
Spring 2022	--	Council/Board approve final range of alternatives and draft addendum for public comment. Public hearings, if desired by states.	Council/Board review FMAT/PDT progress and provide guidance on further development of alternatives. FMAT/PDT further develops alternatives.
Summer 2022	--	FMAT/PDT and AP meetings to develop recommendations for final action. Council/Board take final action.	AP meeting to review FMAT/PDT progress and recommend final range of alternatives. Council/Board approve final range of alternatives.
Fall 2022	MC/TC and Council/Board consider for use in development of 2023 recreational management measures.	Framework/addendum documents completed by staff. Framework document submitted to NMFS for approval and implementation.	FMAT/PDT develops draft public hearing document and draft Commission amendment for public hearings.
Late 2022	recreational management measures.	Federal rulemaking process.	Council/Board approve documents for public hearings.
Early 2023			Public hearings.
Spring 2023	--	Potential federal implementation.	FMAT/PDT and AP meetings to develop recommendations for final action.
Summer 2023	--	--	Council/Board take final action.

Date	Technical Guidance Document	Framework/Addendum	Amendment ¹
Fall 2023	MC/TC and Council/Board consider for use in development of 2024 recreational management measures.	MC/TC and Council/Board consider for use in development of 2024 recreational management measures.	Staff complete amendment documents. Council document submitted to NMFS for approval and implementation
Early 2024			Federal rulemaking process.
Mid 2024	--	--	
Late 2024 or Jan 2025	--	--	Potential federal implementation.

Technical Guidance Document Topics

As described above, the following three topics could be further developed through a technical guidance document, pending further consideration of the specific changes desired. Each of these topics are described in more detail below.

- Develop a process for identifying and smoothing outlier MRIP estimates (part of the prioritized topic of “better incorporate MRIP uncertainty into management”).
- Evaluate the pros and cons of using preliminary current year MRIP data (part of the prioritized topic of “better incorporate MRIP uncertainty into management”).
- Develop guidelines for maintaining *status quo* recreational management measures.

Adopt a Process for Identifying and Smoothing Outlier MRIP Estimates

In recent years, the Commission’s Summer Flounder, Scup, and Black Sea Bass Technical Committee identified two MRIP black sea bass harvest estimates as outliers (i.e., New York 2016 wave 6 for all modes and New Jersey 2017 wave 3 private/rental mode only) and replaced them with smoothed estimates when developing state waters recreational management measures. These smoothed estimates have not been used in other parts of the management process, including the stock assessment, recreational harvest limit (RHL) and annual catch limit (ACL) overage evaluations, and the setting of federal waters recreational management measures.

The Monitoring and Technical Committees have not used statistical methods to identify potential outlier estimates for the other three species; however, they have addressed variability in the data for all four species in other ways such as using averages of multiple previous years when predicting future harvest under different management measures

The Council and Board agreed that it would be beneficial to adopt a standardized process for identifying and adjusting (if needed) outlier MRIP estimates. This process would be applied to both high and low outlier estimates as appropriate and could be used for all four species.

The Technical Committee used the Modified Thompson’s Tau approach to identify the two outlier black sea bass estimates. They used two different methods to smooth those estimates. They agreed that the appropriate method may vary on a case by case basis. If guidelines are adopted for standardizing the process of identifying and smoothing outlier MRIP estimates, it will be important for the Monitoring and Technical Committees to maintain the discretion to deviate from this process if they provide justification for doing so.

The process currently used by the Monitoring and Technical Committees to recommend recreational management measures is not codified in the FMPs; therefore, a change to this method would not require an FMP framework/addendum or amendment.

Evaluate the Pros and Cons of Using Preliminary Current Year Data

Each fall, Council staff develop projections of recreational harvest of summer flounder, scup, and black sea bass in the current year to compare against the upcoming year's RHL. These projections combine preliminary current year harvest estimates through wave 4 (i.e., through August) with the proportion of harvest by wave in one or more past years.³ The Monitoring Committee recommends the appropriate methodology in any given year. The data used (e.g., one or multiple previous years) varies on a case by case basis.

A different process is used for bluefish. Historically, expected bluefish recreational harvest has been evaluated when considering a recreational to commercial transfer. Expected bluefish harvest was typically based on the previous year or a multiple year average and did not account for preliminary current year data.

These different methodologies were developed based on Monitoring Committee guidance. The FMPs do not prescribe which data should be used to develop recreational management measures, beyond requiring use of the best scientific information available. The Council and Board wish to evaluate the appropriateness of using preliminary current year data and data from one or multiple previous years to project harvest for comparison against the upcoming year's RHL. If the Council and Board wish to provide guidance to the Monitoring and Technical Committees on which data to use, then this could be considered through a technical guidance document. However, if they wish to place restrictions on the use of certain types of data (e.g., preliminary current year data), then an FMP framework/addendum may be necessary.

Develop Guidelines for Maintaining Status Quo Recreational Management Measures

The Council and Board wish to consider standardized guidelines for comparing both recreational harvest data (all considerations described above related to outliers and preliminary data could apply) and multiple stock status metrics (biomass, fishing mortality, recruitment) when deciding if measures should remain unchanged. For example, poor or declining stock status indicators could require changes when status quo would otherwise be preferred. These guidelines would take into account existing FMP requirements, such as the accountability measures.⁴

The idea behind this concept is to establish a pre-determined, standardized checklist of metrics to evaluate when determining if recreational management measures can remain unchanged, should be more restrictive, or can be liberalized. For example, if projected recreational harvest falls within a pre-defined range above or below the next year's RHL (see next page), if recruitment and biomass trends are stable or increasing, if fishing mortality trends are stable or decreasing, and if fishing effort trends are stable or decreasing, then status quo management measures could be justified. Alternatively, if projected recreational harvest exceeds a pre-determined range above and below the RHL, if recruitment or biomass trends are declining, if fishing mortality is

³ In December 2020, MRIP announced new standards related to the dissemination of recreational catch and harvest estimates. Instead of publishing wave-level estimates, the estimates will now be published as cumulative estimates every two months. Wave-level estimates will continue to be available by request; therefore, this will not require a change to how the Monitoring Committee has typically projected current year harvest for summer flounder, scup, and black sea bass. More information is available at: <https://www.fisheries.noaa.gov/feature-story/noaa-fisheries-establishes-recreational-fishing-survey-and-data-standards>.

⁴ The summer flounder, scup, and black sea bass accountability measures are summarized in this document: https://www.mafmc.org/s/AMs-description_SF_scup-BSB_Dec2020.pdf.

above the target level, or if fishing effort shows increasing trends, then more restrictive management measures may be needed. Decisions related to future management measures will be more complicated when these indicators show a mix of positive and negative signals. Therefore, the Monitoring and Technical Committees should have the discretion to deviate from the pre-determined guidelines based on annual considerations and should provide justification for their recommendations.

The Recreational Reform Steering Committee referred to this as the “sign posts” method and drafted a preliminary example which was discussed at the October 2019 joint Council/Board meeting.⁵ However, other examples could be considered.

As previously noted, the FMPs do not prescribe which data should be used to develop recreational management measures, beyond requiring use of the best scientific information available. If the Council and Board wish to adopt guidelines on how to evaluate the available data, then this could be considered through a technical guidance document.

Framework/Addendum Topics

The following four topics could be further developed through a joint framework/addendum. Each of these topics are described in more detail below.

- Envelope of uncertainty approach for determining if changes to recreational management measures are needed (part of the prioritized topic of “better incorporate MRIP uncertainty into management”).
- Develop process for setting multi-year recreational management measures.
- Consider changes to the timing of federal waters measures recommendations.
- Harvest Control Rule proposal put forward by 6 recreational organizations.

Depending on the specific changes desired, it is possible that the envelope of uncertainty approach could be developed through a technical guidance document, rather than a framework/addendum. The working group may also determine that some of the items currently listed under the technical guidance document may require a framework/addendum. The Council and Board can further evaluate the scope of the framework/addendum based on the working group’s evaluation at a future joint meeting.

Envelope of Uncertainty Approach for determining if Changes to Recreational Management Measures are Needed

Under this approach, a pre-defined range above and below the projected harvest estimate (e.g., based on percent standard error) would be compared against the upcoming year’s RHL. If the RHL falls within the pre-defined range above and below the projected harvest estimate, then no changes would be made to management measures.

In some recent years, the Monitoring and Technical Committees have recommended maintaining status quo measures for black sea bass and summer flounder based on percent standard error (PSE) values associated with MRIP estimates. The intent behind the envelope of uncertainty approach is to develop a standard, repeatable, and transparent process to be used each year, rather than an ad hoc process. The Monitoring and Technical Committees would maintain the discretion to deviate from this process if they saw sufficient justification to do so.

This approach could be used in combination with other topics listed in this document, such as the process for identifying and smoothing outlier MRIP estimates, considerations related to the use

⁵ See the briefing materials, presentation, and webinar recording available at: <https://www.mafmc.org/briefing/october-2019>.

of preliminary current year data, and considerations related to the timing of the recommendation for federal waters management measures.

The 2013 Omnibus Recreational Accountability Measures Amendment considered a similar approach using confidence intervals around catch estimates to determine if the recreational ACL had been exceeded; however, that amendment proposed using only the lower bound of the confidence interval, rather than the upper and lower bounds. For this reason, that portion of the amendment was disapproved by NOAA Fisheries.

Develop Process for Setting Multi-Year Recreational Management Measures

The FMPs allow recreational catch and harvest limits to be set for up to three years at a time. However, each year the Council and Board consider recent data on recreational catch and harvest as well as updated stock status information, if available, before determining if the recreational possession limits, fish size limits, and open/closed seasons should be modified to ensure that the following year's RHL can be met but not exceeded. These annual considerations can result in frequent adjustments to the recreational management measures. Some Council and Board members have called this "chasing the RHL." This can be especially frustrating to stakeholders when availability is high and there is not a perceived conservation need to adjust the measures.

To address these issues, the Council and Board wish to further develop and evaluate a process for setting recreational management measures that would be in place for two years at a time, with a strong commitment among all state and federal managers to making no changes in the interim year. This would include restricting the use of conservation equivalency to make adjustments to management measures through the Commission process in the interim year. This would also include not reacting to new data that would otherwise allow for liberalizations or require restrictions. The Council and Board would react to these data when developing new recreational management measures for the following two years. The considerations described in the previous section regarding guidelines for maintaining status quo measures would not apply in the interim year. The Recreational Reform Steering Committee drafted a preliminary example process which was discussed at the October 2019 joint Council/Board meeting.⁶

An FMP framework/addendum would be required to allow for the use of multi-year recreational management measures in this way. For example, changes to the current accountability measure regulations would be needed. Additional considerations are needed regarding the Magnuson Act requirements for annual ACL overage evaluation.

Consider Changes to the Timing of Recommendations for Federal Waters Recreational Management Measures

Table 3 lists the timeline for development and implementation of recreational management measures for summer flounder, scup, and black sea bass in recent years. The timeline for bluefish has differed as preliminary current year data have not typically been used for bluefish.

The Council and Board wish to further evaluate the pros and cons of adopting federal waters recreational management measures in December (as is current practice for summer flounder, scup, and black sea bass), as opposed to earlier in the year, such as October or August. If the approach described above for multi-year management measures is used, these decisions would be made every other August, October, or December, rather than every year.

⁶ See the briefing materials, presentation, and webinar recording available at: <https://www.mafmc.org/briefing/october-2019>.

The current process of recommending federal waters measures for the upcoming year in December can pose challenges for implementing needed changes in both federal and state waters in a timely and coordinated manner. It also limits how far in advance for-hire businesses can plan their trips for the upcoming year.

In recent years, changes to the federal recreational measures for summer flounder, scup, and/or black sea bass have not been implemented until May-July of the year in which the changes are needed. Adopting recommendations for federal waters measures in August or October could allow for changes to be implemented earlier in the year; however, less information on current year fishery performance would be available for consideration.

The current regulations associated with the recreational management measures for these species do not specify the time of year at which these decisions must be made. However, a change to this timeline would impact certain parts of the FMPs which are not defined in regulations. For example, Frameworks 2, 6, and 14 to the Summer Flounder, Scup, and Black Sea Bass FMP include annual timelines for using conservation equivalency to consider if the federal waters recreational management measures for summer flounder (Frameworks 2 and 6) and/or black sea bass (Framework 14) should be waived in favor of state waters measures. For this reason, any changes to the timing of the federal waters measures recommendation should be done through a framework/addendum and cannot be addressed through a technical guidance document.

Table 3: Timeline for development and implementation of state and federal waters recreational management measures for summer flounder, scup, and black sea bass in recent years.

Month	Action
August	Council/Board set or review next year’s recreational catch and harvest limits.
November	Monitoring Committee uses preliminary current year MRIP data through wave 4 to project the full current year’s harvest for comparison against the next year’s RHL. The Monitoring Committee recommends changes to recreational management measures, if needed.
December	Council/Board adopt federal waters recreational management measures for the following year and agree on the overall level of reduction or liberalization (if any) to be achieved by the combination of all state and federal waters measures in the following year.
January - April	States develop and Board reviews and approves state waters recreational management measures for the current year.
May - July	Changes to federal waters measures implemented.

Harvest Control Rule

Six recreational fishing organizations submitted a proposal called a Harvest Control Rule through the scoping period for the Summer Flounder, Scup, and Black Sea Bass Commercial/Recreational Allocation Amendment.⁷ This was originally put forward as an allocation proposal; however, after considering the advice of the FMAT and the Recreational Reform Steering Committee, the Council and Board agreed that the allocation aspects of this proposal are not feasible under the Magnuson Act. They expressed an interest in further considering the aspects of the proposal which address the setting of recreational management

⁷ The full proposal can be found on pages 147-152 of this document: https://www.mafmc.org/s/Tab02_SFSBSB-ComRec-Allocation-Amd_2020-05.pdf.

measures, considered independently from the commercial/recreational allocation aspects of the proposal. Specifically, they wished to further evaluate the proposal's recommendation for pre-determined recreational management measure "steps" associated with different biomass levels.

The conceptual idea behind this part of the proposal is to determine a range of pre-defined management measures which would be used at different biomass levels. The upper and lower bounds of these management measure "steps" would be informed by input from recreational stakeholders. The proposal states that the most liberal step would include the most liberal set of measures preferred by anglers when biomass is high. The proposal suggests that beyond a certain level, anglers do not "need" a smaller minimum fish size, higher bag limit, or longer open season. The most conservative step would include the most restrictive measures which could be tolerated without major loss of businesses such as bait and tackle shops and party/charter businesses. The proposal also suggests that there is a point at which making measures more restrictive no longer has a conservation benefit. These ideas are conceptual at this stage and have not been fully developed or analyzed. Fully developing these concepts would require extensive stakeholder input to meet the intent of the proposal.

The Magnuson Act requires that ACLs be set each year in pounds or numbers of fish, and that each ACL have associated AMs to prevent exceeding the ACL and to trigger a management response if an ACL is exceeded. The FMP must define a way to measure total removals (total dead catch) and to evaluate performance relative to an ACL set in numbers of fish or pounds. This does not mean it is impossible to start with preferred measures and translate those into catch, but managers are still required to demonstrate that catch associated with the measures is not expected to exceed the ACL. Ultimately, managers must demonstrate that measures are expected to prevent overfishing.

To comply with these Magnuson Act requirements, each set of recreational measures should be clearly associated with projected catch levels. One concern with this approach is the feasibility of accurately predicting catch levels at each of the management measure steps. Even when recreational measures have remained similar across years, the resulting MRIP estimates have sometimes varied significantly. Total dead catch can vary substantially with external factors such as changing total and regional availability, recruitment events, or changing effort based on factors other than management measures. For these reasons, the pre-determined management measure steps, especially the upper and lower bounds, would be a starting point for consideration and would need to be regularly re-evaluated. The Council and Board could not commit to maintaining recreational management measures within a pre-determined range; however, the range could be put forward as a target.

The proposal suggests that higher levels of biomass correspond to higher levels of access, which could allow for liberalization of recreational measures. However, under current recreational fishery capacity, effort and catch can scale with biomass and availability, in some cases even under highly restrictive recreational measures. This complicates the assumption that recreational measures can liberalize when biomass increases. In addition, changes in the recreational fishery over time (e.g., general effort increases, species-specific effort changes, legal/policy constraints, and improved technology for targeting fish) further complicate the assumption that past recreational measures can be used to estimate expected future catch.

However, there are benefits to the transparency provided by a tiered management approach with clearly defined measures at each level. Additional exploration of the relationship between the effectiveness of recreational management measures and estimated biomass would also be worthwhile.

Amendment Topics

Recreational Sector Separation

Recreational sector separation would entail managing the for-hire components of the recreational fisheries separately from anglers fishing on private or rental boats and from shore.

Recreational sector separation could be considered through either separate allocations to the for-hire sector and private anglers (including anglers fishing from private or rental boats and from shore), or as separate management measures for the two recreational sectors without a fully separate allocation, as summarized below.

Sub-Allocation of the Recreational Annual Catch Limit or RHL

This option would specify within the FMP a percentage allocation to the for-hire recreational sector of either the ABC, the recreational ACL, or the RHL. There are several potential ways in which a separate allocation could be created as described below and illustrated in Figure 1. The differences between some options are nuanced, and the pros and cons of each approach should be further explored.

- A. Current FMPs:** The ABC is divided into the recreational ACL and the commercial ACL for summer flounder, scup, and black sea bass and the recreational ACT and commercial ACT for bluefish. Projected recreational discards are removed from the recreational ACL/ACT to derive the RHL. Both the private and for-hire recreational sectors are held to a single combined ACL/ACT and RHL. Evaluation of potential overages, and consequences for those overages, are considered for all recreational modes combined.
- B. Separate ACLs:** Under this approach, the ABC would be allocated three ways: into a private recreational ACL, a for-hire recreational ACL, and a commercial ACL. This method would require development of these three allocations, as well as separate AMs for the private recreational and for-hire sectors. The FMAT for the Summer Flounder, Scup, and Black Sea Bass Commercial/Recreational Allocation Amendment does not recommend this approach as it would impact the commercial allocation.
- C. Recreational Sub-ACLs:** Under this approach, the ABC would remain divided into the recreational ACL and commercial ACL based on the allocation approach defined in the FMPs. The recreational ACL would be further allocated into private and for-hire sub-ACLs. This would require development of separate AMs for the private recreational and for-hire sectors. The FMAT for the Summer Flounder, Scup, and Black Sea Bass Commercial/Recreational Allocation Amendment recommended further development of this approach as it would maintain separation of the recreational sectors from the commercial sector, it allows for consideration of different discard trends by each recreational sector, and it allows for the full separation of accountability for overages (as opposed to separate RHLs, described below).
- D. Separate RHLs:** Under this approach, the private and for-hire sectors would remain managed under a single recreational ACL. Separate RHLs could be developed for each sector for the purposes of determining management measures. Accountability under this option would likely be partially at the RHL level as performance to the RHL could be evaluated for each recreational sector for the purposes of adjusting future management measures to constrain harvest to the RHL, and partially at the ACL level (in the sense that AMs must be established at the ACL level). This approach includes separate management of harvest only; dead discards are not included in RHLs and would be accounted for at

the ACL level. Separation at the RHL level does not represent full separation and would need to include joint accountability to a combined recreational ACL, which could be problematic if one sector contributes more to an overage than the other.

Note that any approach creating separate ACLs or sub-ACLs would require the development of corresponding separate AMs.

In addition to determining where sector separation occurs, consideration should be given to which data sources and methods to use for sector allocation, including:

- How to use MRIP and/or VTR data in the allocations;
- Whether to allocate using catch (landings and dead discards) or harvest (related to the question of whether to allocate at the ACL or RHL level);
- Whether to allocate in numbers of fish or pounds;
- The base years or other method of evaluating this recreational sector data.

Many scoping comments expressed an interest in sector separation to make better use of for-hire VTR data, which some stakeholders perceive as being more accurate than the MRIP for-hire estimates since vessels with federal for-hire permits are required to submit VTRs for every trip. However, there are also concerns about the accuracy of self-reported VTR data. In addition, VTR data include estimates of numbers of fish, but not weight of fish, so incorporating VTR data into allocations would require either establishing allocations in numbers of fish, developing a method to estimate weights of harvested and discarded fish from the numbers reported on VTRs, or adding a required data field for weight to VTRs. On average, for-hire VTR harvest is lower than the MRIP for-hire estimates since 1995 (Figure 2).

Most states do not require state-only permitted vessels to submit VTRs and data from these groups would be missing if VTRs were used to determine for-hire allocations. Data from some state-specific VTR programs (e.g., New York) are incorporated into the MRIP estimates of for-hire effort; however, they are not incorporated into the MRIP estimates of catch as they have not been validated.

The FMAT for the Summer Flounder, Scup, and Black Sea Bass Commercial/Recreational Allocation Amendment noted that there is currently some "borrowing" of data between the private angler and for-hire fisheries in the MRIP estimation process. For-hire estimation by MRIP incorporates some information from VTRs. While separate estimates for each recreational sector could serve as a basis for managing them separately, if the sectors were split completely, improvements would likely be needed in the sampling efforts for both sectors. Currently, much of the for-hire sampling for summer flounder, scup, and black sea bass is focused on discards, which provides information on the length of discarded fish that contributes to the discard estimates for the entire recreational fishery. Many of the length measurements for landings come from private anglers, which influences the mean weight of landed fish used to generate recreational harvest estimates.

Separate dead discard estimates in weight are not currently available by recreational sector. Technically it would be possible to generate these estimates, but it may not be entirely defensible. Calculation of sub-allocation options could use total dead catch in numbers of fish (for catch-based allocations for separate ACLs or sub-ACLs), or total harvest in numbers of fish or pounds (for harvest-based allocations for separate RHLs). Example allocations based on harvest in numbers of fish are shown in Table 4.

The uncertainty in the recreational data by mode is an important consideration when determining if sector separation is appropriate. Because the uncertainty in the MRIP data increases as it is

broken down by wave, state, and mode, the Council and Board would need to consider whether the benefits of sector separation outweigh the drawback of increased uncertainty when using mode-specific data to set and evaluate catch limits and recreational measures. Considerations related to identifying and smoothing outlier MRIP estimates, as described earlier in this document, could also apply to this topic.

As an example, MRIP percent standard errors (PSEs) were queried for the North and Mid-Atlantic regions (Maine through Virginia) for all for-hire modes combined and private/rental/shore modes combined for summer flounder, scup, and black sea bass. Table 5 shows that the PSEs increase for the for-hire mode when separated from the combined mode data. PSEs for the private/shore modes combined are slightly higher than those for all modes combined, but there is less of a difference from the combined modes PSEs given that private and shore estimates account for most harvest of these species. PSEs also vary by species.

There are no comparable estimates of uncertainty for VTR data because these data are not an expanded estimate associated with sampling uncertainty.

Separate Management Measures for For-Hire vs. Private/Rental and Shore Modes Without Separate Allocations

Rather than creating a separate allocation for the for-hire sector, a degree of sector separation could be achieved by setting different management measures to account for the differing priorities and data for for-hire vs. private anglers (including the private/rental and shore modes).

Separate management measures by recreational sector are currently used in the bluefish fishery in federal and state waters and in a limited manner in state waters for scup and black sea bass. Massachusetts, Rhode Island, Connecticut, and New York use different scup possession limits for the for-hire sector at certain times of year. Connecticut has a different black sea bass possession limit for for-hire vessels during a certain time of the year.

It could be beneficial to develop a policy for how sector-specific measures should be developed, how accountability should be evaluated, and how adjustments would be applied to both recreational sectors. Such a policy could clarify the process for stakeholders and managers, reducing process uncertainty and increasing transparency when setting recreational measures.

Creating a policy for separate measures for for-hire vs private anglers does not require an amendment. This could possibly be done through specifications, or if not, through a framework/addendum. If separate allocations were created (see previous section), describing the process for setting separate recreational measures would be an inherent part of that option.

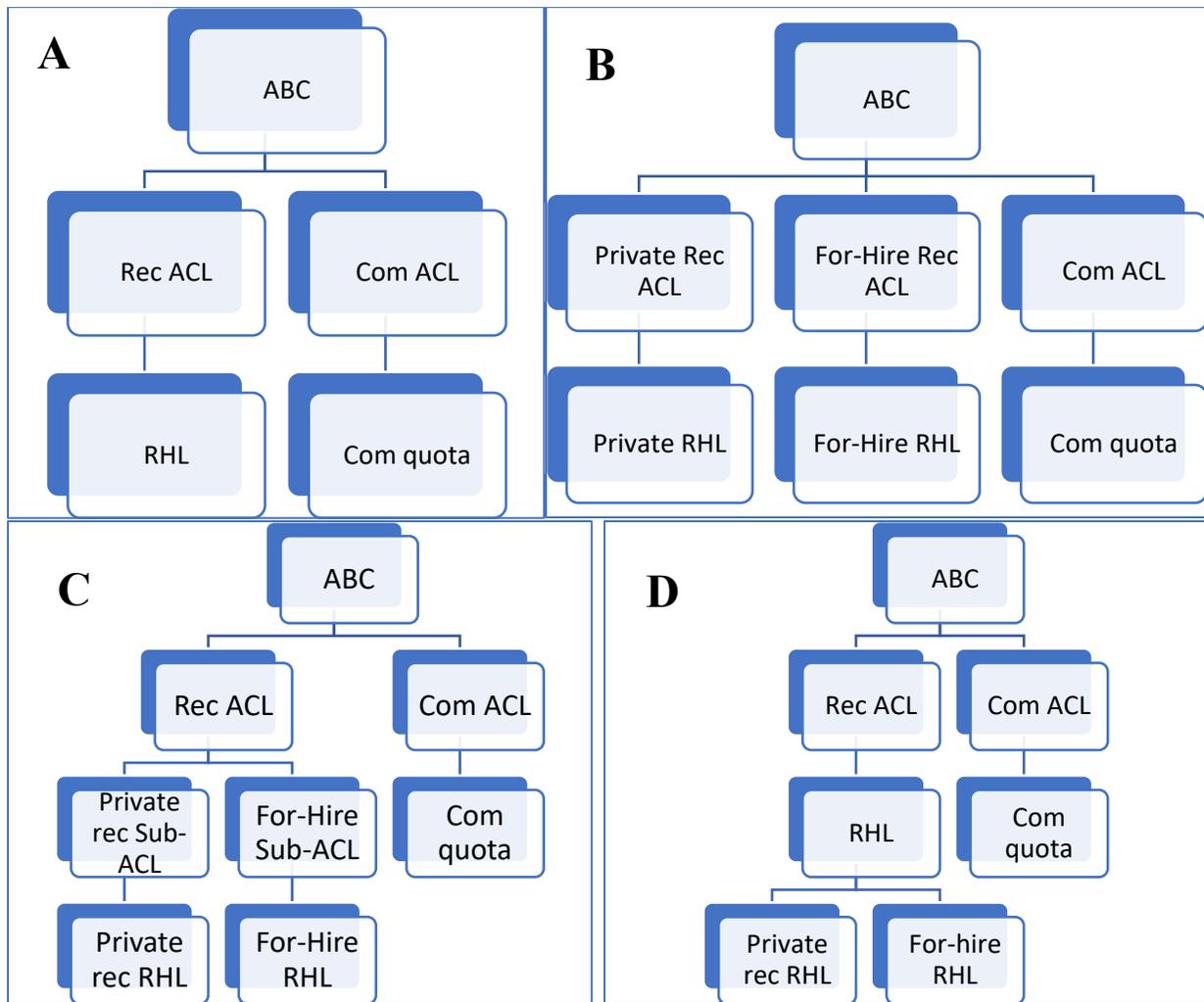


Figure 1: Conceptual flowcharts of potential recreational sector separation configurations including A) status quo, B) separate ACL allocations, C) sub-ACL allocations, and D) separate RHLs. This figure is based on the current management program for summer flounder, scup, and black sea bass. The commercial/recreational allocation for bluefish currently occurs at the ACT level.

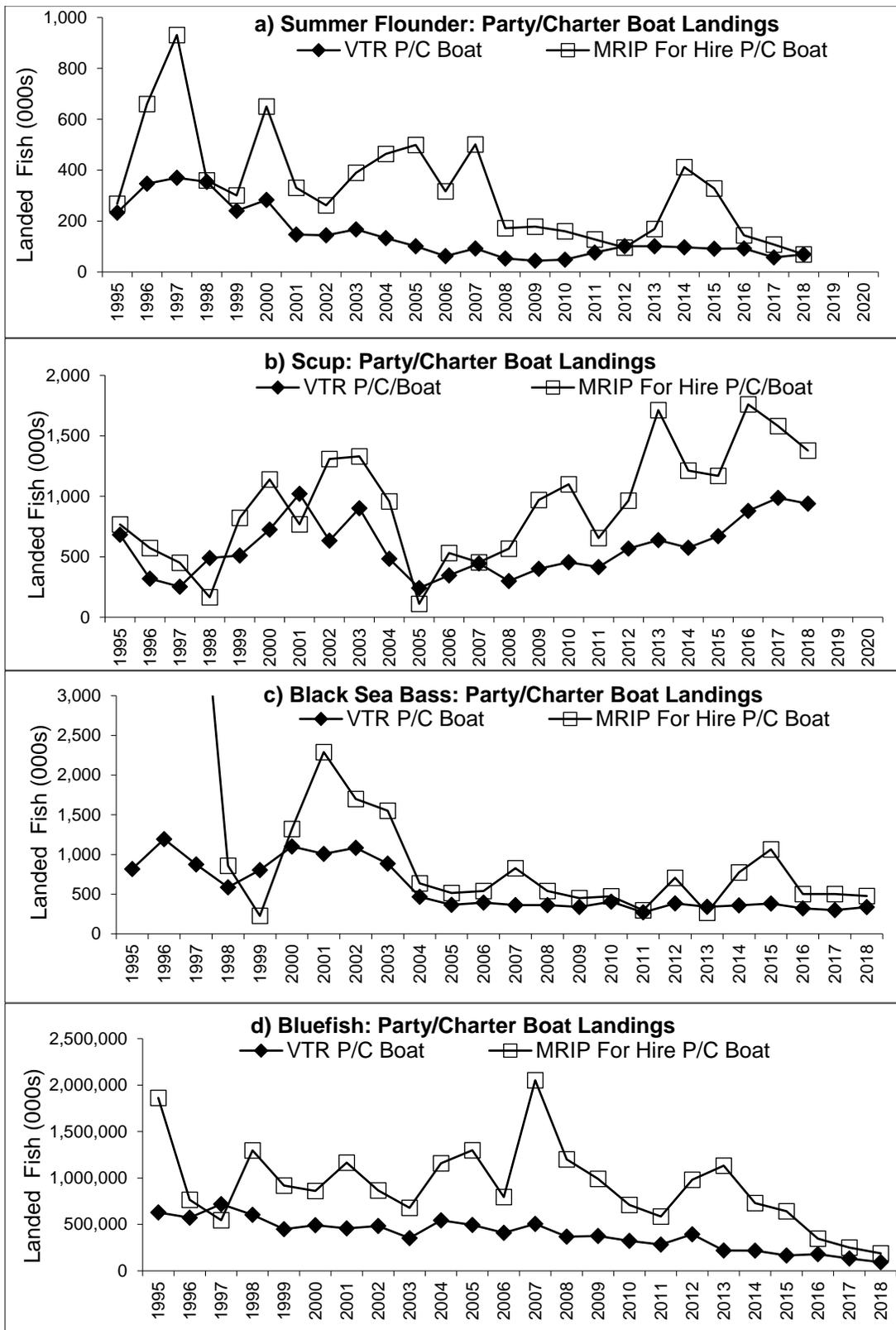


Figure 2: Comparison of federal party/charter vessel VTR estimates of landed fish vs. MRIP estimated for-hire landed fish, 1995-2018, for a) summer flounder, b) scup, c) black sea bass, and d) bluefish.

Table 4: Example approaches for calculating separate sub-allocations to private (i.e., private/rental and shore mode) and for-hire sectors, based on harvest in numbers of fish.

Species	Approach	Years	Private	For-Hire
Summer Flounder	5 most recent years through 2018	2014-2018	94%	6%
	10 most recent years through 2018	2009-2018	95%	5%
	15 most recent years through 2018	2004-2018	95%	5%
Scup	5 most recent years through 2018	2014-2018	89%	11%
	10 most recent years through 2018	2009-2018	88%	12%
	15 most recent years through 2018	2004-2018	88%	12%
Black Sea Bass	5 most recent years through 2018	2014-2018	86%	14%
	10 most recent years through 2018	2009-2018	87%	13%
	15 most recent years through 2018	2004-2018	82%	18%
Bluefish	5 most recent years through 2018	2014-2018	97%	3%
	10 most recent years through 2018	2009-2018	96%	4%
	15 most recent years through 2018	2004-2018	95%	5%

Table 5: MRIP PSEs for total catch in numbers of fish, North and Mid-Atlantic (Maine through Virginia) for summer flounder, scup, and black sea bass by mode, 2004-2019.

Year	Summer Flounder			Scup			Black Sea Bass		
	All For-Hire	Private/Shore	All modes	All For-Hire	Private/Shore	All modes	All For-Hire	Private/Shore	All modes
2004	13.8	5.9	5.7	28.4	15.4	14.4	19.7	16.3	14.2
2005	11.3	7.4	7.1	27.1	19.6	19.1	16.9	12.4	11
2006	16.8	8	7.7	18.1	16.1	15.4	15.3	11.1	9.8
2007	10.9	6.7	6.4	16.5	15.3	14.3	10.4	10.9	9.2
2008	10.1	6.5	6.3	16.8	11.6	10.5	9.5	15.7	14.4
2009	10.1	5.8	5.7	15.1	11.5	10.6	10.3	10.2	9.3
2010	12.6	6.8	6.7	24.8	10.4	9.8	12.0	23.2	21.8
2011	9.3	6.6	6.5	18.8	15.2	14.5	12.4	10.5	9.7
2012	9.9	11.3	11.1	16.4	12.3	11.3	10.1	9.7	9.1
2013	12.9	8.2	8.0	7.9	11.7	10.6	6.8	9	8.5
2014	18.2	8.6	8.2	17.8	10.5	9.7	13.5	8.4	7.6
2015	12.2	8	7.7	14.0	15.6	14.8	12.0	10.2	9.1
2016	8.5	8	7.8	10.6	10.5	10.0	7.1	8.5	7.9
2017	13.5	10.7	10.4	8.0	13.5	12.7	6.6	11.8	11.1
2018	8.7	6.6	6.4	9.2	8.6	8.1	9.6	6.3	5.7
2019	12.6	8.8	8.6	10.7	6.7	6.1	8.7	6.5	5.9
AVG	11.9	7.7	7.4	16.6	13.2	12.4	11.5	11.6	10.6

Recreational Catch Accounting

The theme of improved recreational catch accounting was prominent in many scoping comments for the Summer Flounder, Scup, and Black Sea Bass Commercial/Recreational Allocation Amendment. Examples of changes recommended through scoping are listed below. The intent behind these recommendations is to reduce uncertainty in the recreational data. It is worth noting that MRIP is currently considered the best scientific information available for the recreational fisheries and will continue to be used for stock assessments and catch limit evaluations for the foreseeable future. MRIP is a national-level program and the Council and Commission have a very limited ability to influence changes to the MRIP estimates.

- **Private angler reporting:** Private angler reporting has been explored in specific fisheries in other regions, and as of August 2020 is required in this region for bluegill and golden tilefish. Consideration could be given to the feasibility of private angler reporting for summer flounder, scup, black sea bass, and bluefish given that these fisheries take place in state and federal waters, from shore and from private and for-hire vessels, and that there are millions of directed trips per year for each species (e.g., an estimated 8.7 million angler trips for which summer flounder was the primary target, 2.7 million for which scup was the primary target, 1.4 million for which black sea bass was the primary target, and 5.3 million for which bluefish was the primary target in 2019). Given the scale of these recreational fisheries, mandatory private angler reporting may be a challenge to implement. Thorough consideration should be given to the potential levels of non-compliance and how this may impact the resulting data. Lessons learned from other private angler reporting programs should be evaluated and considered.
- **Tagging programs:** A few scoping comments suggested that anglers be issued tags for a specific number of fish each year. Tagging programs are used in some recreational fisheries, but they may be more appropriate for species with much lower harvest levels than summer flounder, scup, black sea bass, and bluefish. Consideration should be given to the pros and cons of moving forward with this approach compared to a traditional possession limit, especially considering the millions of targeted recreational trips for these species. Ensuring that the program is fair and equitable is a challenge. For example, consideration would need to be given to who receives tags, how they are distributed, and how the program is administered.
- **Mandatory tournament reporting:** A few scoping comments recommended mandatory catch reporting for recreational fishing tournaments. During the May 2020 joint meeting, one Council/Board member questioned the value of mandatory reporting for tournaments given that tournament catch likely constitutes a very small percentage of total catch. An evaluation of summer flounder, scup, black sea bass, and bluefish catch in tournaments has not been performed and may be complicated by the lack of a centralized list of tournaments which would catch these species. Tournament catch of these species is included in the MRIP estimates, but is not specifically designated as tournament catch.
- **Enhanced VTR requirements:** A few scoping comments recommended additional VTR requirements, such as requiring VTRs for for-hire vessels that do not have federal permits and reinstating “did not fish” reports for federal permit holders to better understand fishing effort.



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: ISFMP Policy Board

FROM: Risk and Uncertainty Policy Workgroup

DATE: January 15, 2021

SUBJECT: Risk and Uncertainty Policy

At the 2020 Summer Meeting, Commissioners reviewed the draft Risk and Uncertainty Policy. The Policy Board tasked the Risk and Uncertainty Policy Workgroup (R&U WG) with further developing the tool, including refining the criteria for the Risk and Uncertainty Decision Tool (decision tool) and updating the striped bass example.

Through collaboration with the Committee on Economics and Social Sciences (CESS) and members of Assessment Science Committee, the R&U WG developed criteria for the decision tool. The socioeconomic criteria seek to capture the short-term and long-term effects of the proposed management change. To accommodate the socioeconomic criteria, the R&U WG divided the risk and uncertainty process into two stages: First, the species Technical Committee (TC) provides inputs for the technical components of the decision tool (stock status, model uncertainty, management uncertainty, environmental uncertainty, environmental importance) and produces a preliminary harvest level; second, the CESS evaluates the effects of the proposed management using the preliminary harvest level and the socioeconomic criteria.

Through collaboration with members of the Striped Bass TC, the striped bass example was updated based on the revised criteria. This example is intended to be illustrative and did not follow the full risk and uncertainty process (e.g., it did not incorporate Commissioner input on the weightings). As a result, the striped bass example does not necessarily reflect what would have resulted from a full implementation of the process.

The following documents describe and demonstrate the proposed risk and uncertainty process:

- A Risk and Uncertainty Policy document, which describes the general proposed approach to managing risk and uncertainty in decision-making
- A Risk and Uncertainty TC Guidance document, which outlines the specifics of the proposed risk and uncertainty process
- The Risk and Uncertainty Decision Tool, which includes a description of the decision tool, the decision tool criteria, and the striped bass example; the Risk and Uncertainty Decision Tool spreadsheet can be downloaded and used to explore different scenarios:
http://www.asmfc.org/files/Meetings/2021WinterMeetingWebinar/PolicyBoard_Risk_UncertaintyDecisionTool.XLSX
- A Risk and Uncertainty Weightings Survey, which provides an example survey for determining Commissioner weighting preferences for the decision tool

As a next step, the R&U WG recommends using tautog as a pilot case for the Risk and Uncertainty Policy. Unlike the striped bass example, the tautog pilot would be a full implementation of the process, though it would still allow flexibility to make any necessary changes to the process.

M21-15

DRAFT ASMFC Risk and Uncertainty Policy

Risk and Uncertainty Policy Statement

The Commission recognizes that fishery information is inherently variable, and that successful management requires full consideration of this uncertainty and the associated risks on management decisions. The purpose of the Commission's Risk and Uncertainty Policy is to provide a consistent yet flexible mechanism to account for both scientific and management uncertainty in the Commission's decision-making process in order to protect all Commission-managed stocks from the risk of overfishing, while minimizing any adverse social, economic, or ecosystem effects. This Policy seeks to maximize the long-term benefits across all of our marine fishery resources by providing objective criteria to characterize both scientific and management uncertainty, and to evaluate management risk. Additionally, the Policy improves transparency in the management process, allowing for better communication among managers, industry, and other stakeholders.

Risk and Uncertainty Approach

The Commission's approach consists of a framework, the Risk and Uncertainty Decision Tool (decision tool), that can be adapted to fit the needs of a particular species, while also providing transparency and consistency across species. The decision tool incorporates diverse information about risk and uncertainty, as well as the relative importance of this information, into a single value. The current version of the tool arrives at a probability of achieving management objectives to be used with projections for that species; however, it could be adapted for other management questions in the future.

The Risk and Uncertainty Decision Tool consists of a series of questions related to the risk and uncertainty of a species' management. Responses to the questions may be quantitative or qualitative, and may be indices or scores composed of multiple pieces of information. These responses are weighted based on the relative importance of the information to management of risk and uncertainty for the species. The decision tool combines all of this information into a single value, in this case the probability of achieving the management objective, through a logistic function.

The resulting probability will be provided to the Technical Committee (TC) or Plan Development Team (PDT) for developing management options that meet the Board's risk tolerance, i.e., the probability of achieving management objectives.

Template Risk and Uncertainty Decision Tool

The following is a template decision tool with technical inputs and default weightings.

Decision Tool Inputs	Scoring	Default Weight
<i>1. Stock Status</i>		
Stock status: is stock overfished/depleted?	0 to 1	0.10
Stock status: is stock above or below biomass target?	0 to 1	0.10
Stock status: is overfishing occurring?	0 to 1	0.10
Stock status: is fishing mortality above or below the target?	0 to 1	0.10
<i>2. Additional Sources of Uncertainty</i>		
Model uncertainty: how much model uncertainty is there?	0 to 5	0.10
Management uncertainty: how much management uncertainty is there?	0 to 5	0.10

Environmental uncertainty: how much environmental uncertainty is there?	0 to 5	0.10
3. Additional Risk Considerations		
Environmental/trophic importance: how important is the species to the ecosystem/other key species?	0 to 5	0.10
4. Socioeconomic Considerations		
Commercial short-term: what is the short-term socioeconomic effect of the proposed management change on the commercial fishery?	-5 to 5	0.10
Commercial long-term: what is the long-term socioeconomic effect of the proposed management change on the commercial fishery?	-5 to 5	0.10
Recreational short-term: what is the short-term socioeconomic effect of the proposed management change on the recreational fishery?	-5 to 5	0.10
Recreational long-term: what is the long-term socioeconomic effect of the proposed management change on the recreational fishery?	-5 to 5	0.10

Developing Species-Specific Decision Tools

A species Board may either approve the template decision tool for use for the species or adapt the decision tool to meet the specific needs of a species (e.g., by adjusting the weightings for different categories or adding additional information). However, information on stock status, modeling uncertainty, environmental uncertainty, management uncertainty, environmental importance, and socioeconomic considerations should always be incorporated. The Policy Board may develop further guidance for species-specific decision tools.

The species Board will work in collaboration with the TC and the Committee on Economics and Social Sciences (CESS) to develop the decision tool and its supporting documentation. will also develop a species matrix, a document recording the information relevant to the decision tree questions, for the species.

The species Board will provide guidance on the information to be included in the species decision tool (e.g., new decision tool questions) and the weightings (i.e., relative importance of the information). The species Board may develop the weightings by discussion at a meeting or by another method for determining collective input, such as a survey. This information will then be passed on to the species TC.

The species TC, including a representative from the CESS, will create the species matrix with information relevant to the decision tool. The TC will use this information to assign responses to the decision tool input questions on stock status, modeling uncertainty, environmental uncertainty, management uncertainty, and environmental importance. The TC will produce a preliminary probability of achieving management objectives and provide a draft report on the decision tool responses to the CESS. The CESS will add the socioeconomic components to the species matrix, decision tool, and report. A recommended probability of achieving the management objectives that includes the socioeconomic components will be produced.

The TC will present a report outlining the initial risk and uncertainty input determinations to the species Board. The report will efficiently detail the responses to the decision tool input questions, a concise

explanation of the reasoning behind each response, and the preliminary probability of achieving management objectives.

The species Board will review the report, including the TC's responses to the decision tool input questions, in a public setting, allowing for maximum transparency in the process. The species Board may make changes to the question weightings (i.e., the relative importance of the information). In addition, the Board may make changes to the responses to the input questions if warranted, though the stock status, modeling uncertainty, environmental uncertainty, management uncertainty sections should be accepted unless there is a significant reason to change them. The species Board will approve the finalized responses to the decision tool and the final probability of achieving management objectives.

Using the Risk and Uncertainty Decision Tool

When a management action is anticipated for a species, the TC and CESS will review and update the decision tool inputs as needed. The TC will provide a revised report including the revised inputs, a preliminary probability (without the socioeconomic component), and the harvest level associated with that probability to the CESS. The CESS will update the socioeconomic component and score the proposed management change questions based on the preliminary probability and harvest level. A recommended probability of achieving the management objectives that includes the socioeconomic components will be produced. The revised report, highlighting any changes and including the probabilities with and without the socioeconomic component, will be provided to the species Board for review and approval. This revised probability may be approved without revisiting the decision tool weightings.

Once the report is finalized, it will be transferred as guidance to the TC or PDT responsible for developing management action documents. The probability of achieving the management objectives will be used for developing management options that reflect the species Board's risk preferences.

As new information arises, the decision tool may be updated and a new probability of management success produced, following the processes above. The species TC should periodically review the species matrix to ensure that all information is up-to-date. The species Board should revisit weightings every 5 years to ensure that they still reflect the Boards' preferences, unless the Board has already reviewed the weightings during regular updates and use of the decision tool.

Risk & Uncertainty TC Guidance Document

The Risk & Uncertainty Decision Tool

The Risk and Uncertainty Decision Tool consists of a series of questions related to the risk and uncertainty of a species' management. Criteria for responding to the questions may be quantitative or qualitative, and may be indices or scores composed of multiple pieces of information. The responses, or technical inputs, are converted to the same numerical scale (0 to 1) and then weighted. The weightings allow for the up-weighting or down-weighting of each input based on the relative importance of the issue to management of the species. Generally, the species Technical Committee (TC) and the Committee on Economics and Social Sciences (CESS) will provide the technical inputs, while the species Board will determine the weightings.

The Risk & Uncertainty Decision Tool combines all of the weighted inputs into a single value, a recommended probability of achieving management objectives (e.g., the probability of F being below the F target), which can then be used for developing management options. The logistic function for calculating the recommended probability is:

$$p(Z) = \frac{1}{1 + e^{-Z}}$$

Where $Z = a + b_1x_1 + b_2x_2 + \dots$, denoting a list of inputs (x) times their weighting coefficients (b). The intercept, a , sets the initial scale of the Z score. An a of 0, as used here, corresponds to a default value of 50% when the stock is at or above its biomass target and at or below its F target, and no additional risk or uncertainty factors are considered. The intercept can also be adjusted.

The management objective depends on the goals of the analysis required. The initial implementation of the decision tool would be to set a total allowable catch (TAC) or harvest strategy to that has the recommended probability of meeting a specific objective. That objective could be being at or below the F target (for setting annual specifications), being at or below the F threshold (for ending overfishing), or being at or above the SSB target or threshold at a specified point in time (for stock rebuilding).

Template Decision Tool Inputs & Default Weightings

The following is a template decision tool with technical inputs and default weightings. The inputs are separated into four components: stock status, additional sources of uncertainty, additional risk considerations, and socioeconomic considerations. Specific criteria for scoring the decision tool inputs can be found in the Risk and Uncertainty Decision Tool spreadsheet. The decision tool may be adapted to meet species-specific needs (see Species-Specific Decision Tool below).

Decision Tool Inputs	Scoring	Default Weight
<i>1. Stock Status</i>		
Stock status: is stock overfished/depleted?	0 to 1	0.10
Stock status: is stock above or below biomass target?	0 to 1	0.10
Stock status: is overfishing occurring?	0 to 1	0.10
Stock status: is fishing mortality above or below the target?	0 to 1	0.10
<i>2. Additional Sources of Uncertainty</i>		
Model uncertainty: how much model uncertainty is there?	0 to 5	0.10

Management uncertainty: how much management uncertainty is there?	0 to 5	0.10
Environmental uncertainty: how much environmental uncertainty is there?	0 to 5	0.10
3. Additional Risk Considerations		
Environmental/trophic importance: how important is the species to the ecosystem/other key species?	0 to 5	0.10
4. Socioeconomic Considerations		
Commercial short-term: what is the short-term socioeconomic effect of the proposed management change on the commercial fishery?	-5 to 5	0.10
Commercial long-term: what is the long-term socioeconomic effect of the proposed management change on the commercial fishery?	-5 to 5	0.10
Recreational short-term: what is the short-term socioeconomic effect of the proposed management change on the recreational fishery?	-5 to 5	0.10
Recreational long-term: what is the long-term socioeconomic effect of the proposed management change on the recreational fishery?	-5 to 5	0.10

The stock status, additional sources of uncertainty, and additional risk considerations inputs can only increase the final recommended probability of achieving management objectives, making it more precautionary. For example, an overfishing status could have a score of 1, which would add to the Z score, increasing the recommended probability.

The socioeconomic considerations inputs can either increase or decrease the recommended probability, depending on the anticipated effect of management change. Negative socioeconomic effects will decrease the recommended probability, making it less precautionary, while positive socioeconomic effects will increase the probability. Short-term and long-term socioeconomic effects are separated, allowing Commissioners to weight them differently based on their tradeoff preferences. For example, if short-term negative economic effects were of greater concern, those inputs could be weighted higher, while if long-term benefits of fishery sustainability were considered more important, the long-term inputs could be weighted higher. Commercial and recreational effects are also separated as effects may be different across sectors and there may be tradeoffs between them.

While the template decision tool includes default weightings, they may be changed to reflect Commissioner preferences. For example, stock status could be given a higher weight than other components if it was deemed the most important factor.

Species-Specific Decision Tools

Species-specific Risk and Uncertainty Decision Tools may be developed as relevant management needs for ASMFC species occur. A species Board, in consultation with the TC, can adapt the template decision tool questions and weightings to meet the specific needs of a species (e.g., by adjusting the weightings for different categories or adding additional information). However, all decision tools should incorporate information on stock status, modeling uncertainty, management uncertainty, environmental uncertainty, environmental importance, and socioeconomic considerations.

Species Matrix

The species matrix is a document for recording all information relevant to the decision tool. This document can be periodically updated by the TC and CESS representative, and should be updated each time the risk and uncertainty process is initiated. The matrix should be adapted to fit the needs of the species and its decision tool.

Risk and Uncertainty Report

The TC and CESS will draft and the Board will revise a Risk and Uncertainty Report for each risk and uncertainty process. The report will efficiently detail the responses to the decision tool input questions and provide concise explanations of the reasoning behind each response. It will also provide a preliminary probability of achieving the management objectives (without the socioeconomic component) and the final recommended probability (with the socioeconomic component). The report will be standardized across species, with some variation allowed to account for the differences between species-specific management objectives.

Developing a Species-Specific Decision Tool

A species Board may elect to use the template decision tool or develop a species-specific decision tool. The species-specific decision tool and supporting documents will be created following the process outlined below:

1. The species Board initiates the development of species-specific decision tool and provides:
 - a. guidance on changes to or additional categories for the decision tool
 - b. preliminary weightings for the decision tool inputs (weightings can be determined via survey or real-time voting technology)
2. TC gathers information relevant to the input questions for components 1-3 of the Decision Tool (stock assessment, additional uncertainty, additional risk) and compiles it in a species matrix.
3. TC provides responses to the input questions for components 1-3. The decision tool's logistic formula is used to arrive at a preliminary probability of achieving the management objectives.
4. The TC drafts a report including the following & provides it to the CESS:
 - a. responses to the input questions
 - b. a brief summary of the reasoning behind the responses to the questions, including supporting information/data from the species matrix
 - c. the preliminary probability of achieving management objectives
5. CESS gathers information relevant to the input questions for component 4 (socioeconomic considerations) of the decision tool and compiles it in a species matrix.
6. CESS provides responses to the input questions for component 4, which are added to the decision tool. Note: the management change portion of the socioeconomic component will not be scored until a management action is anticipated, as this score is intended to capture the effect of the proposed management change (see Risk & Uncertainty Decision Tool spreadsheet for further details on scoring and criteria.) A revised probability of achieving the management objectives is produced.
7. The socioeconomic responses (component 4), justifications for scoring, and recommended probability of achieving the management objectives are added to the report.
8. The TC presents the report to the species Board.
9. During a meeting, the Board may make revisions to the decision tool and report, including:

- a. Adjusting the weightings of the responses or components
 - b. Revising the responses to the input questions
 - i. Note: responses to status questions should be accepted unless there is a significant reason to change them. Responses to the additional uncertainty questions (component 2) should also typically be based on expert opinion. The environmental importance and socioeconomic considerations questions (components 3 & 4) incorporate value judgements about management goals and may be more likely to warrant Commissioner input.
 - ii. Any changes made should be documented in the report, including justifications for changes or additional information.
10. The Board approves the final report and the probability of achieving management objectives
11. The final probability of achieving management objectives is provided to the TC or PDT as guidance for developing management options.

Using the Decision Tool

An anticipated management action for a species (e.g., when a stock assessment is completed) will trigger a review, and possible update, of the species matrix and decision tool.

1. Decision tool review is triggered by anticipated management action
 - a. If the TC determines that no updates are needed at that time, the existing preliminary probability (excluding the socioeconomic component) will be used to produce a preliminary TAC/harvest level, which will be provided to the CESS in the draft report.
 - i. Note: If the Board had previously changed one of the inputs (scores) in the decision tool and none of the underlying information has changed, the input should continue to match the Board's change rather than the original TC/CESS input. The report should continue to include the text describing both the original scoring by the TC/CESS, as well as the change made by the Board and a justification for why the change was made.
 - b. If the TC determines that updates are needed, they will update the species matrix and decision tool with new information and revised input determinations, as needed. A new preliminary probability and associated TAC/harvest level will be produced.
2. The TC drafts a report including the following & provides it to the CESS:
 - a. The responses to the input questions, highlighting changes to the responses
 - b. A brief summary of the reasoning behind the responses to the questions, including supporting information/data from the species matrix.
 - c. The preliminary recommended probability of achieving management objectives.
 - d. The preliminary TAC/harvest level associated with that probability.
3. The CESS scores the management change portion of the socioeconomic questions based on the preliminary TAC/harvest level and the TC's draft report. The CESS also makes any necessary changes to the other portions of the socioeconomic component. A final recommended probability of achieving the management objectives is produced.
4. The socioeconomic component and final recommended probability are added to the report.
5. The TC presents the report to the species Board for review.

6. During the meeting, the species Board may make adjustments to the decision tool and report, if warranted. The species Board will then approve the revised decision tool, report, and final probability of achieving management objectives.
7. The final probability of achieving management objectives is provided to the TC or PDT as guidance for developing management options.

Updating the Decision Tool

As noted above, a determination that management action is needed for a species will trigger a review, and possible update, of the species matrix and decision tool.

The TC and CESS should periodically update the species matrix with relevant information. If new information arises that may significantly alter the decision tool inputs, the Board should be consulted to see if they would like to update the decision tool. The decision tool can be updated separately from a management action.

The species Board may make changes to the decision tool weightings when the decision tool is being used. However, it is preferable to make decisions about the weightings separately from management actions. The species Board should revisit weightings every 5 years to ensure that they still reflect the Boards' preferences, unless they have already reviewed the weightings during recent updates or uses of the decision tool. The revised weightings will be passed on to the species TC to update the species decision tool.

RISK & UNCERTAINTY DECISION TOOL SPREADSHEET

K. Drew, S. Murray, and J. McNamee

January 2021

Decision Tool Overview

The Risk and Uncertainty Decision Tool consists of a series of questions related to the risk and uncertainty of a species' management. The responses (technical inputs) are converted to the same numerical scale (0 to 1) and then weighted. The weightings allow for the up-weighting or down-weighting of each input based on the relative importance of the issue to management of the species. Generally, the species Technical Committee (TC) and the Committee on Economics and Social Sciences (CESS) will provide the technical inputs, while the species Board will determine the weightings (see TC Guidance Doc for further details on process).

The Risk & Uncertainty Decision Tool combines all of the weighted inputs into a single value, a recommended probability of achieving management objectives (e.g., F below the F target), which can then be used for developing management options. The logistic function for calculating the recommended probability is:

$$p(Z) = \frac{1}{1 + e^{-Z}}$$

Where $Z = a + b_1x_1 + b_2x_2 + \dots$, denoting a list of technical inputs (x) multiplied by their weighting coefficients (b). The intercept, a , sets the initial scale of the Z score. An a of 0, as used here, corresponds to a default value of 50% when the stock is at or above its biomass target and at or below its F target, and no additional risk or uncertainty factors are considered. The intercept can also be adjusted.

The decision tool is comprised of four components, which consist of multiple questions:

1. Stock Status
2. Additional Sources of Uncertainty
3. Additional Risk Considerations
4. Socioeconomic Considerations

The stock status, additional sources of uncertainty, and additional risk considerations components can only increase the recommended probability, making it more precautionary. The socioeconomic components can either increase or decrease the recommended probability, depending on the anticipated effect of management change. Negative socioeconomic effects will decrease the recommended probability, making it less precautionary, while positive socioeconomic effects will increase the probability. Short-term and long-term socioeconomic effects are separated, allowing Commissioners to weight them differently based on their tradeoff preferences.

Contents

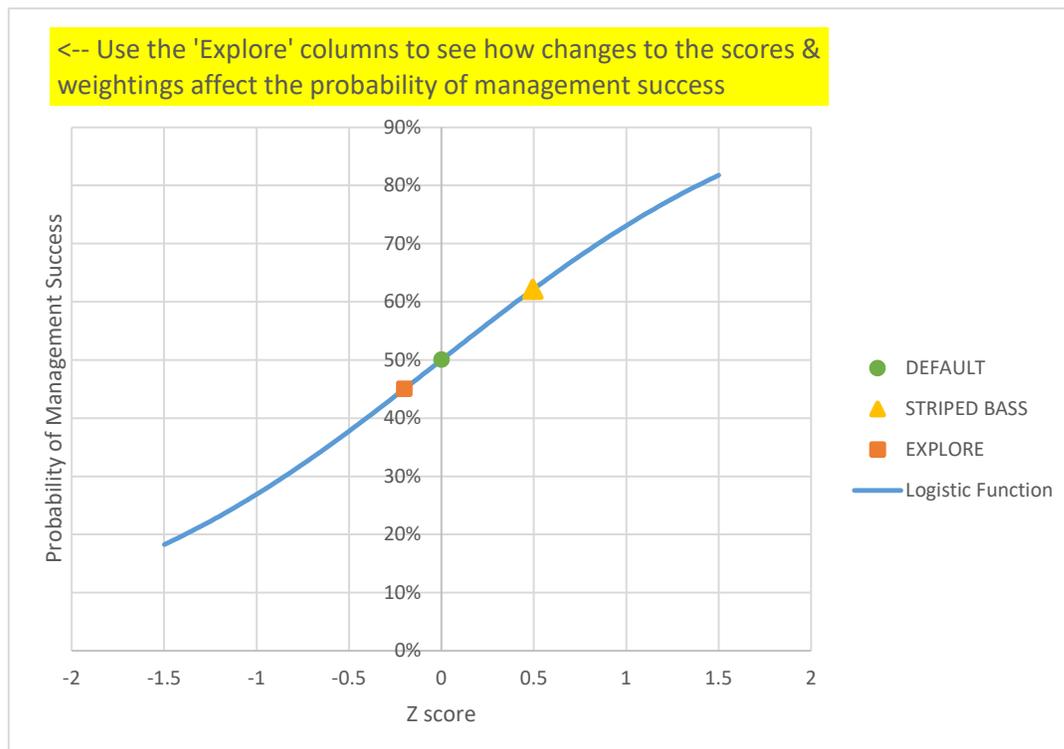
The "**Decision Tool**" tab illustrates how the decision tool combines the technical inputs with the weightings to arrive at the recommended probability of achieving the management objectives. The "**Explore**" columns on this tab can be used to see how changes to the inputs or weightings for a species will change the final probability.

The decision tool questions and the criteria for determining the technical inputs are listed in the "**R&U Criteria**" and the "**Socioeconomic Criteria**" tabs. The criteria for components 1-3 are listed in "R&U Criteria," while the criteria for component 4 are detailed in the "Socioeconomic Criteria" tab.

The "**Striped Bass Matrix**" tab provides an example species matrix, which includes more detailed explanations for the striped bass example scoring.

RISK & UNCERTAINTY DECISION TOOL						
Scoring Default and Examples						
Decision Tool Question (Scoring scale)	DEFAULT		Striped Bass		EXPLORE	
	Weight	Score	Weight	Score	Weight	Score
P(SSB < SSB threshold) (0 to 1 scale)	0.1	0%	0.1	100%	0.1	0%
P(SSB < SSB target) (0 to 1 scale)	0.1	0%	0.1	100%	0.1	0%
P(F > F threshold) (0 to 1 scale)	0.1	0%	0.1	95%	0.1	0%
P(F > F target) (0 to 1 scale)	0.1	0%	0.1	100%	0.1	0%
How much model uncertainty is there? (0 - 5 scale)	0.1	0	0.1	0.5	0.1	0
How much management uncertainty is there? (0 - 5 scale)	0.1	0	0.1	1.5	0.1	0
How much environmental uncertainty is there? (0 - 5 scale)	0.1	0	0.1	2	0.1	0
How important is the species to the ecosystem? (0 - 5 scale)	0.1	0	0.1	1	0.1	0
What is the short-term socioeconomic effect of changes to the comm fishery? (-5 to 5 scale*)	0.1	0	0.1	-2	0.1	-5
What is the long-term socioeconomic effect of changes to the comm fishery? (-5 to 5 scale*)	0.1	0	0.1	2	0.1	0
What is the short-term socioeconomic effect of changes to the rec fishery? (-5 to 5 scale*)	0.1	0	0.1	-4	0.1	-5
What is the long-term socioeconomic effect of changes to the rec fishery? (-5 to 5 scale*)	0.1	0	0.1	4	0.1	0
Z Score	0		0.495		-0.2	
Recommended Probability	50%		62%		45%	

*In these examples, the long-term socioeconomic components **add** to the probability (making it more precautionary), while short-term socioeconomic components **subtract** from the probability (less precautionary); however, the signs for either or both components could be reversed (e.g. short-term could add to the probability) if the situation warrants it.



RISK & UNCERTAINTY DECISION TOOL CRITERIA

1. Stock Status			
Component	Question	Criteria	Score
Overfished	Is the stock overfished?	Probability that SSB is below the SSB threshold from stock assessment, if available (0.0 - 1.0) or a binary (0 for not overfished, 1 for overfished);	0.0 to 1.0
SSB Target	Is the stock below the biomass target?	Probability that SSB is below the SSB target from stock assessment, if available (0.0 - 1.0) or a binary (0 for above the target, 1 for below the target)	0.0 to 1.0
Overfishing	Is overfishing occurring?	Probability that F is above the F target/threshold from stock assessment, if available (0.0 - 1.0) or a binary (0 for no overfishing, 1 for overfishing)	0.0 to 1.0
F Target	Is fishing mortality above the target?	Probability that F is above the F target from stock assessment, if available (0.0 - 1.0) or a binary (0 for below the target, 1 for above the target)	0.0 to 1.0

NOTE: The criteria for **Additional Sources of Uncertainty & Additional Risk Considerations** are broad, providing suggested factors to consider rather than a more detailed scoring rubric to be applied across all species. TCs may use their discretion to determine which factors are most relevant for their species and if there are other factors that should be added. The TC may also develop a more detailed species-specific scoring rubric. This approach allows for an assessment that is tailored to individual species.

2. Additional Sources of Uncertainty								
Component	Question	Criteria	None (0)	Very Low (1)	Low (2)	Moderate (3)	High (4)	Very High (5)
Model Uncertainty	How much model uncertainty is there?	Factors to consider include: retrospective patterning, sensitivity runs, model fits, model parameter precision, sensitivity to starting values.	Minimal uncertainty, excellent diagnostics			Moderate uncertainty, fair diagnostics		High uncertainty, poor diagnostics
Management Uncertainty	How much management uncertainty is there?	Factors to consider include: performance of management towards goals, stock status (if there are additional concerns not captured by stock status components), initiation of relevant management actions, uncertainty due to factors outside control of managers (e.g., historical incorrect assumptions about uncalibrated MRIP estimates), prescriptive FMP to guide future management decision, noncompliance, IUU fishing activities	Minimal uncertainty and/or already included			Moderate uncertainty		High uncertainty
Environmental Uncertainty	How much environmental uncertainty is there (that is not accounted for in the model)?	Factors to consider include: is link between recruitment and environment adequately accounted for in model, vulnerability to climate change, is natural mortality adequately accounted for in model (constant across time and ages vs varying across ages and time), degree of prey dependence (for predators) or predator dependence (for prey) if not accounted for in model	Minimal uncertainty and/or already included			Moderate uncertainty		High uncertainty

3. Additional Risk Considerations								
Component	Question	Criteria	None (0)	Very Low (1)	Low (2)	Moderate (3)	High (4)	Very High (5)
Ecosystem Importance	How important is the species to the ecosystem or other key species?	Factors to consider include: role in maintaining other key species, such as other important fished species or threatened or endangered species; role in providing important ecosystem services; importance to ecosystem functions	No ecosystem/trophic concerns	Low ecosystem/trophic importance		Moderate ecosystem/trophic importance		High ecosystem/trophic importance

4. Socioeconomic Considerations			
Component	Question	Criteria	Score
Commercial Short-term	What is the short-term socioeconomic effect of the proposed management change on the commercial fishery?	See Socioeconomic Criteria tab	-5 to 5
Commercial Long-term	What is the long-term socioeconomic effect of the proposed management change on the commercial fishery?	See Socioeconomic Criteria tab	-5 to 5
Recreational Short-term	What is the short-term socioeconomic effect of the proposed management change on the recreational fishery?	See Socioeconomic Criteria tab	-5 to 5
Recreational Long-term	What is the short-term socioeconomic effect of the proposed management change on the recreational fishery?	See Socioeconomic Criteria tab	-5 to 5

NOTE: The results from components 1-3 will be used to develop a preliminary probability of management success and the associated TAC/change to harvest. These preliminary results, along with the scoring for components 1-3, will be provided to the CESS in order to score the socioeconomic components.

See the Socioeconomic Criteria tab for further details.

SOCIOECONOMIC CRITERIA

NOTE: The results of the other components of the Risk & Uncertainty Decision tool (stock status, model uncertainty, mgmt. uncertainty, environmental uncertainty, trophic importance), the preliminary probability of management success, and preliminary TAC/harvest level associated with those scores will be provided to the CESS for consideration when scoring the socioeconomic components.

R&U Decision Tool Question: What is the short-term or long-term socioeconomic effect of the proposed management change on the fishery?

The socioeconomic component seeks to account for the potential negative socioeconomic effects of a more precautionary approach (often short-term), while also accounting for the potential positive socioeconomic effects of a more precautionary approach (often long-term). Short-term and long-term effects are separated so that the tradeoffs between them can be assessed and weighted according to Commissioner preferences. Scores are also broken down into commercial and recreational.

The final socioeconomic effects scores are a combination of the importance of the fishery and the magnitude of the proposed management change. The importance scores include an indicator of value (commercial economic value or recreational desirability) and a fishery dependence indicator. The importance score is then scaled based on the management change score.

Commercial Importance Score = (Commercial Economic Value + Fishery Dependence)/2

Recreational Importance Score = (Recreational Desirability + Fishery Dependence)/2

Short-term Commercial Score = **Commercial Importance** * **Short-term Management Change**

Long-term Commercial Score = **Commercial Importance** * **Long-term Management Change**

Short-term Recreational Score = **Recreational Importance** * **Short-term Management Change**

Long-term Recreational Score = **Recreational Importance** * **Long-term Management Change**

Note: the CESS may change the sign of the management change scores (e.g. + to -) if the expected effects of the management change are the opposite (e.g. if the short-term effects of a TAC reduction are positive, or the long-term effects of a TAC reduction are negative) in a particular case, noting the justification for the change.

The socioeconomic criteria use indicators as a way to consistently and efficiently score fisheries across the Commission's species. However, the CESS may manually change the score(s) for a species if there is additional outside information or if the CESS determines that the score does not match the reality of the fishery. Scores changes should be documented in the species matrix and risk and uncertainty report.

SOCIOECONOMIC IMPORTANCE CRITERIA								
Commercial Fishery Importance								
Indicator	Notes	None (0)	Very Low (1)	Low (2)	Moderate (3)	High (4)	Very High (5)	SCORE
Economic Value	Total coastwide annual ex-vessel value (3 yr. avg.; 2019 dollars)	no commercial fishing	< \$1 million	\$1 - 10 million	\$10 - 30 million	\$30 - 100 million	>\$100 million	
Community Dependence	Average community dependence (ex-vessel value as % of total ex-vessel value for all species) for top 10 communities. Top 10 communities = highest landings. (3 yr. avg.)	no commercial fishing	0 - 5%	5 - 15%	15 - 25%	25 - 50 %	> 50%	
Commercial Importance Subscore								0
Recreational Fishery Importance								
Indicator	Notes	None (0)	Very Low (1)	Low (2)	Moderate (3)	High (4)	Very High (5)	SCORE
Importance (Desirability)	Total coastwide annual targeted trips (primary or secondary target) as % of total coastwide trips (3 yr. avg.)	no recreational fishing	0 - 0.5%	0.5% - 1.5%	1.5% - 5%	5% - 10%	>10%	
Community Dependence	Average community dependence (targeted trips as % of total rec trips) for top 10 communities. Top 10 communities = most targeted trips. (3 yr. avg.)	no recreational fishing/limited to small #s of trips in fewer than 10 communities	0 - 3 %	3 - 10 %	10 - 15%	15 - 20 %	>20%	
Recreational Importance Subscore								0

PROPOSED MANAGEMENT CHANGE CRITERIA									
Commercial Short-term Management Change									
Indicator	Notes	None (0)	Very Low (0.2)	Low (0.4)	Moderate (0.6)	High (0.8)	Very High (-1)	Direction (-1 or 1)	SCORE
Short-term Commercial Management Change	Score: What is the scale of the proposed management change (based on the preliminary probability)? Direction: What is the short-term socioeconomic effect of increased precaution?	no change	0-2% change	2-5%	5-10%	10-20%	>20% change	1 = positive effect, 1 = negative effect	
Commercial Long-term Management Change									
Indicator	Notes	None (0)	Very Low (0.2)	Low (0.4)	Moderate (0.6)	High (0.8)	Very High (-1)	Direction (-1 or 1)	SCORE
Long-term Commercial Management Change	What is the scale & direction of the effect of increased precaution (increasing the probability of achieving ref. pts., decreasing the TAC) on the longer term sustainability of the recreational fishery?	No effect on sustainability	minimal effects on the fishery's sustainability		moderate effects on the fishery's sustainability		very significant effects on the fishery's sustainability	1 = positive effect, 1 = negative effect	
Recreational Short-term Management Change									
Indicator	Notes	None (0)	Very Low (0.2)	Low (0.4)	Moderate (0.6)	High (0.8)	Very High (-1)	Direction (-1 or 1)	SCORE
Short-term Recreational Management Change	Score: What is the scale of the proposed management change (based on the preliminary probability)? Direction: What is the short-term socioeconomic effect of increased precaution?	no change	0-2% change	2-5%	5-10%	10-20%	>20% change	1 = positive effect, 1 = negative effect	
Recreational Long-term Management Change									
Indicator	Notes	None (0)	Very Low (0.2)	Low (0.4)	Moderate (0.6)	High (0.8)	Very High (-1)	Direction (-1 or 1)	SCORE
Long-term Recreational Management Change	What is the scale & direction of the effect of increased precaution (increasing the probability of achieving ref. pts., decreasing the TAC) on the longer term sustainability of the recreational fishery?	No effect on sustainability	minimal effects on the fishery's sustainability		moderate effects on the fishery's sustainability		very significant effects on the fishery's sustainability	1 = positive effect, 1 = negative effect	

TOTAL SOCIOECONOMIC SCORES													
Score	Direction	Scoring Scale											FINAL SCORE
		Negative					Neutral	Positive					
		Very High	High	Moderate	Low	Very Low	None	Very Low	Low	Moderate	High	Very High	
Commercial													
Commercial Short-term Total Score	Commercial Importance * Long-term Management Change	-5	-4	-3	-2	-1	0	1	2	3	4	5	#VALUE!
Commercial Long-term Total Score	Commercial Importance * Short-term Management Change	-5	-4	-3	-2	-1	0	1	2	3	4	5	#VALUE!
Recreational													
Recreational Short-term Total Score	Recreational Importance * Long-term Management Change	-5	-4	-3	-2	-1	0	1	2	3	4	5	#VALUE!
Recreational Long-term Total Score	Recreational Importance * Short-term Management Change	-5	-4	-3	-2	-1	0	1	2	3	4	5	#VALUE!

STRIPED BASS - SPECIES MATRIX EXAMPLE			
Component	Criteria	Score	Justification
1. Stock Status (Scored 0 to 1)			
Overfished	Probability that SSB is below the SSB threshold from stock assessment, if available (0.0 - 1.0) or a binary (0 for not overfished, 1 for overfished);	1	Probability SSB 2017 < SSB threshold from 2019 assessment
	Probability that SSB is below the SSB target from stock assessment, if available (0.0 - 1.0) or a binary (0 for above the target, 1 for below the target)	1	
SSB Target	Probability that F is above the F target/threshold from stock assessment, if available (0.0 - 1.0) or a binary (0 for no overfishing, 1 for overfishing)	0.95	Probability F2017 > Fthreshold from 2019 assessment
Overfishing	Probability that F is above the F target from stock assessment, if available (0.0 - 1.0) or a binary (0 for below the target, 1 for above the target)	1	
F Target			
2. Additional Sources of Uncertainty (Scored 0 to 5)			
Model Uncertainty	Factors to consider include: retrospective patterning, sensitivity runs, model fits, model parameter precision, sensitivity to starting values.	0.5	Scored based on retrospective patterns, sensitivity runs, model fits, and model parameter precision. The model fits are very good for total catch; reasonable to good fits to catch age composition information (both fleets); age-aggregate index fits are reasonable except for age 1 indices (all standardized residuals < 2, most <1, little to no patterning in residuals); index fits to age composition indices are fair, but generally good for indices that receive higher weight in the model (save MDSSN, for which fits to age composition information is very good); precision of model estimated parameters are generally good (nearly all CVs < 0.20) ; there is some suggestion of sensitivity to starting values, but fishing mortality and Likelihood values among 100 runs do not differ substantially; there is very little retrospective patterning until ~5 years of data are removed, and then the patterning is still modest.
Management Uncertainty	Factors to consider include: performance of management towards goals, stock status (if there are additional concerns not captured by stock status components), initiation of relevant management actions, uncertainty due to factors outside control of managers (e.g., historical incorrect assumptions about uncalibrated MRIP estimates), prescriptive FMP to guide future management decision, noncompliance, IUU fishing activities	1.5	Since the stock is overfished and is experiencing overfishing, arguably goals are not being met and our measures are not working as expected; however, the Management Board has initiated management action, the stock status is at least partially due to past management assuming uncalibrated MRIP estimates, and stock status is explicitly accounted for in component 1. Furthermore, prescriptive, and arguably conservative management triggers are in place in the FMP to guide future management.
Environmental Uncertainty	Factors to consider include: is link between recruitment and environment adequately accounted for in model, vulnerability to climate change, is natural mortality adequately accounted for in model (constant across time and ages vs varying across ages and time), degree of prey dependence (for predators) or predator dependence (for prey) if not accounted for in model	2	Environmental uncertainty wasn't especially explicitly well accounted for in the assessment. There is a likely link between recruitment dynamics and the environment (e.g., spawning and nursery habitat area as a function of precipitation); Striped Bass exhibit a number of characteristics identified by NOAA as increasing their vulnerability to climate change effects, including complexity of reproductive strategy, short duration aggregate spawning, sensitivity to temperature, and specific larval requirements (Morrison et al. 2015). Groner et al. (2018) suggested that Striped Bass in some regions are living at their maximum thermal tolerance and that this is driving increased disease and mortality. The Striped Bass tagging model suggests potential high natural mortality in Chesapeake Bay (starting in the late 1990s), while the assessment model assumes time-constant (though age-varying) natural mortality. On the other hand, fish that migrate to the ocean region are assumed to experience baseline natural mortality due to observations that the Myco disease does not progress further and, in many cases, fish may actually heal (Vogelbein et al. 2006). Striped Bass appear to be opportunistic predators without being dependent on any given prey item under many, but not all, spatial and temporal scales.
3. Additional Risk Considerations (Scored 0 to 5)			
Ecosystem Importance	Factors to consider include: role in maintaining other key species, such as other important fished species or threatened or endangered species; role in providing important ecosystem services; importance to ecosystem functions	1	We considered that Striped Bass is an important predator (but see environmental) and probably an important competitor (e.g., weakfish). Multispecies models suggest that trends in prey natural mortality correlate with Striped Bass abundance or biomass. Menhaden consumption by Striped Bass could be large and has historically been estimated with high uncertainty. We are aware of an April 29th 2019 report of a Striped Bass regurgitating an Atlantic Sturgeon carcass (C Godwin, pers comm) – nevertheless, Striped Bass are likely minor threats to endangered species.

4. Socioeconomic Considerations (Scored 0 to 5, - for negative effects, + for positive effects)			
Commercial Short-term	See Socioeconomic Criteria tab	-2	low
Commercial Long-term	See Socioeconomic Criteria tab	3	moderate
Recreational Short-term	See Socioeconomic Criteria tab	-4	high
Recreational Long-term	See Socioeconomic Criteria tab	5	very high
Socioeconomic Subscores			
<i>(Scored 0 to 5)</i>			
Commercial Economic Value	Total coastwide annual ex-vessel value (3 yr. avg.; 2019 dollars)	3	3 yr. avg. ex-vessel value was approximately \$19 million (2019 dollars) based on non-confidential data; confidential data also reviewed (moderate)
Commercial Fishery Dependence	Average community dependence (ex-vessel value as % of total ex-vessel value for all species) for top 10 communities. Top 10 communities = highest landings. (3 yr. avg.)	2	9% avg. community dependence (low)
Recreational Desirability	Total coastwide annual targeted trips (primary or secondary target) as % of total coastwide trips (3 yr. avg.)	5	14% of coastwide trips (high)
Recreational Dependence	Average community dependence (targeted trips as % of total rec trips) for top 10 communities. Top 10 communities = most targeted trips. (3 yr. avg.)	5	27% avg. community dependence (very high)
<i>(Scored 0 to 1)</i>			
Commercial Management Change Short-term	Score: What is the scale of the proposed management change (based on the preliminary probability)? Direction: What is the short-term socioeconomic effect of increased precaution?	-0.8	Change was -18% (high), assumed to have negative short-term socioeconomic effect; note: this was the actual management change, which may have already included socioeconomic considerations. In the real R&U process, this would be based on the % change that resulted from the preliminary probability (components 1-3).
Commercial Management Change Long-term	What is the scale & direction of the effect of increased precaution (increasing the probability of achieving ref. pts., decreasing the TAC) on the longer term sustainability of the recreational fishery?	0.8	In this example, the long-term effects were assumed to be proportional to the short-term but positive.
Recreational Management Change Short-term	Score: What is the scale of the proposed management change (based on the preliminary probability)? Direction: What is the short-term socioeconomic effect of increased precaution?	-0.8	Change was -18% (high), assumed to have negative short-term socioeconomic effect; note: this was the actual management change, which may have already included socioeconomic considerations. In the real R&U process, this would be based on the % change that resulted from the preliminary probability (components 1-3).
Recreational Management Change Long-term	What is the scale & direction of the effect of increased precaution (increasing the probability of achieving ref. pts., decreasing the TAC) on the longer term sustainability of the recreational fishery?	0.8	In this example, the long-term effects were assumed to be proportional to the short-term but positive.

Risk & Uncertainty Decision Tool - Weightings Survey

Preferences for Decision Tool Weightings

Responses to these questions will be used to determine the weightings (i.e., relative importance) of different inputs to the Risk & Uncertainty Decision Tool. When averaged across respondents, higher ranked inputs will have more weight in the decision tool, while lower ranked inputs will have less weight.

****If you think all inputs should be weighted equally, please rank all questions as "moderately important."****

1. When considering risk & uncertainty for this species, how important is: whether or not the biomass is below the threshold?

Not important	Slightly important	Moderately important	Important	Very important
<input type="radio"/>				

2. When considering risk & uncertainty for this species, how important is: whether or not the biomass is below the target?

Not important	Slightly important	Moderately important	Important	Very important
<input type="radio"/>				

3. When considering risk & uncertainty for this species, how important is: whether or not fishing mortality is above the threshold?

Not important	Slightly important	Moderately important	Important	Very important
<input type="radio"/>				

4. When considering risk & uncertainty for this species, how important is: whether or not fishing mortality is above the target?

Not important	Slightly important	Moderately important	Important	Very important
<input type="radio"/>				

5. When considering risk & uncertainty for this species, how important is: the amount of modeling uncertainty?

Not important	Slightly important	Moderately important	Important	Very important
<input type="radio"/>				

6. When considering risk & uncertainty for this species, how important is: the amount of management uncertainty?

Not important	Slightly important	Moderately important	Important	Very important
<input type="radio"/>				

7. When considering risk & uncertainty for this species, how important is: the amount of environmental uncertainty?

Not important	Slightly important	Moderately important	Important	Very important
<input type="radio"/>				

8. When considering risk & uncertainty for this species, how important is: the importance of the species to the ecosystem or other key species (fished species, endangered or threatened species, etc.)?

Not important	Slightly important	Moderately important	Important	Very important
<input type="radio"/>				

9. When considering risk & uncertainty for this species, how important is: the short-term socioeconomic effect of the proposed management change on the commercial fishery?

Not important	Slightly important	Moderately important	Important	Very important
<input type="radio"/>				

10. When considering risk & uncertainty for this species, how important is: the long-term socioeconomic effect of the proposed management change on the commercial fishery?

Not important	Slightly important	Moderately important	Important	Very important
<input type="radio"/>				

11. When considering risk & uncertainty for this species, how important is: the short-term socioeconomic effect of the proposed management change on the recreational fishery?

Not important	Slightly important	Moderately important	Important	Very important
<input type="radio"/>				

12. When considering risk & uncertainty for this species, how important is: the long-term socioeconomic effect of the proposed management change on the recreational fishery?

Not important	Slightly important	Moderately important	Important	Very important
<input type="radio"/>				

DRAFT

[Date]

To: [Commissioners]

From: Robert Beal, Executive Director

Re: Memorandum Regarding Participation of Pennsylvania in Atlantic Menhaden Management Board

This memorandum summarizes the review of questions concerning the participation of Pennsylvania on the Atlantic Menhaden Management Board in light of provisions of the ASMFC Compact limiting certain states' participation to management of anadromous fish.

1. Articles II, VIII, and XII of the ASMFC Compact address participation by certain states eligible for ASMFC fishery management activities, including Pennsylvania, generally requiring that such participation be limited to anadromous species found in those states' waters.
2. Pennsylvania has been part of the Atlantic Menhaden Management Board since 2016. Because Atlantic Menhaden are not anadromous, the question arose whether it is proper for Pennsylvania to participate in the Menhaden Board.
3. Based upon review of the relevant Compact provisions, reviewing the historical practice, and after conferring with legal counsel, the Interstate Fisheries Management Program Policy Board concluded that Pennsylvania's continued participation on the Menhaden Board is not inconsistent with the referenced Compact limitations. While Pennsylvania's role is limited to anadromous species, that limitation does not foreclose Pennsylvania's participation in the Menhaden Board given the close biological nexus between menhaden and Atlantic Striped Bass, an anadromous species in which Pennsylvania has an interest and has long participated on the ASMFC management board. Allowing Pennsylvania to participate in Menhaden Management Board in light of the biological linkage between menhaden and Striped Bass is consistent with the Commission's increased interest in ecosystem-based management, as reflected in our Commission's Ecological Reference Points (ERP) Work Group, which has been examining reference points that account for Atlantic menhaden's role as a forage fish for Atlantic Striped Bass and other species.
4. Going forward, particular questions regarding states participation in management of specific species will continue be resolved on a case by case basis, mindful of relevant provisions of the Compact, Rules and Regulations, and Charter, and the particular circumstances.

Update to the Atlantic States Marine Fisheries Commission *Profiles of State Artificial Reef Programs and Projects*

date

[add ASMFC logo]

[photo for front]

Atlantic Artificial Reef Summary Information

Permitted Sites

In federal waters	In offshore state waters	In inshore state waters	Total
168	80	89	337

Number of Mitigation Reefs

6

Average Annual Operating Budget

\$348,956

Add Map of Atlantic States with link to each AR program website

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Introduction

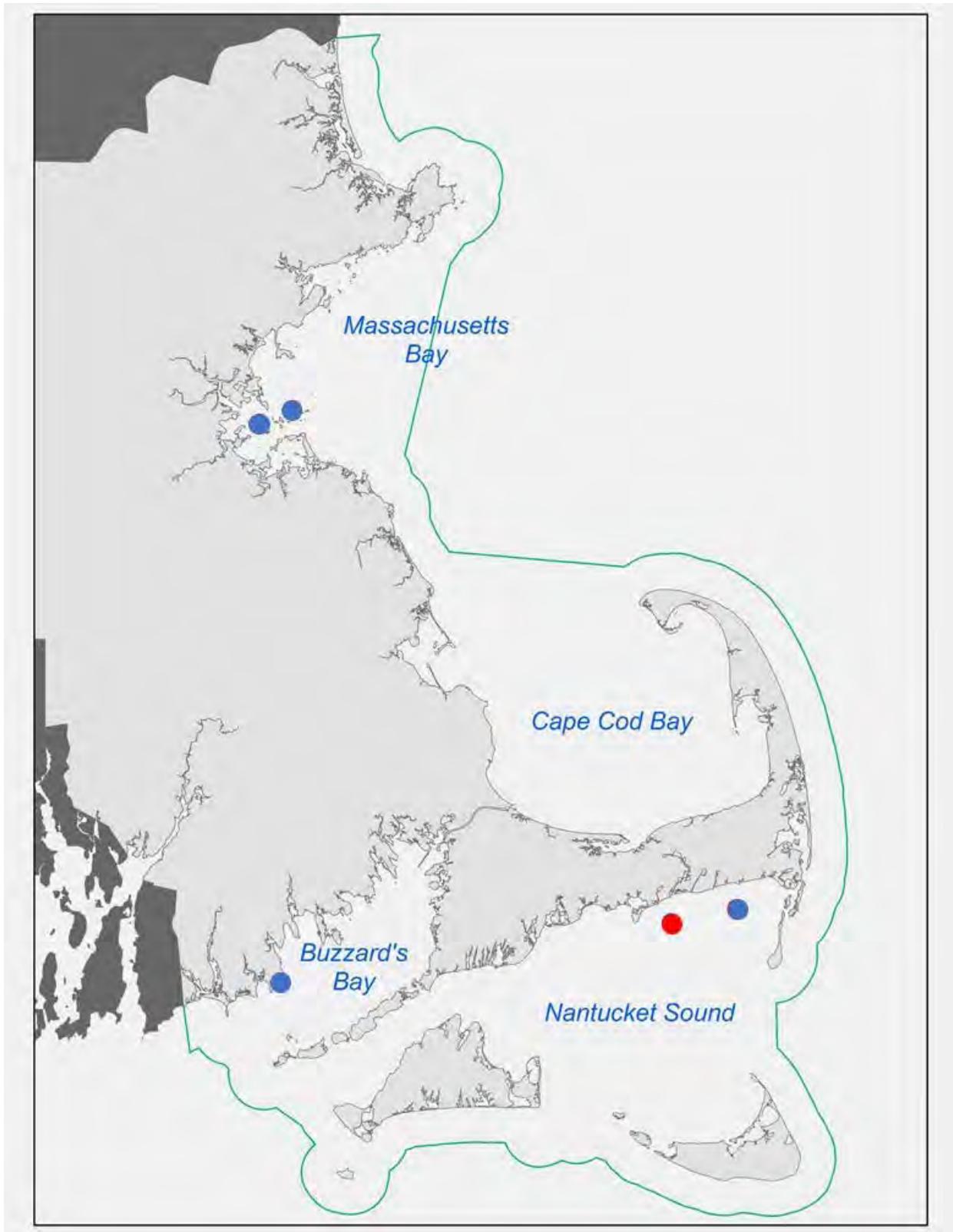
In 1988, the Atlantic States Marine Fisheries Commission published [A Profile of Atlantic Artificial Reef Development](#), which featured profiles for each state's artificial reef program (ARP, see appendix for list

of abbreviations and acronyms). In the 30+ years since its release, many states have expanded their programs; deployed a variety of artificial reefs (ARs) using best management practices for construction, materials, and siting; and have monitored sites for use – both by fishers and divers, as well as by marine life. This publication is an update to the 1988 profiles, providing summary information on each state’s program, as well as featuring some reefing highlights over the last three decades.

MASSACHUSETTS

Artificial Reef Program Overview

Artificial Reef Details	
Number of Permitted Sites	5 (all in offshore waters)
Number of Mitigation Reefs	2
Program Details	
Artificial Reef Management Authority	Massachusetts Division of Marine Fisheries (MA DMF)
Average Annual Operating Budget	\$10,000
State Artificial Reef Plan	https://www.mass.gov/media/9591/download
Reef Coordinator	Mark Rousseau; Mark.Rousseau@mass.gov
Shellfish Reef Program Contact (separate from the ARP)	Jeff Kennedy; Jeff.Kennedy@mass.gov
Artificial Reef Website, with list of deployments	https://www.mass.gov/service-details/artificial-reefs
State Reef Publications	https://www.mass.gov/media/9596/download
Research Collaborations	https://www.tandfonline.com/doi/pdf/10.1080/00288330909510001



ARs in Massachusetts. Red circles indicate reefs placed before 1988, and blue circles indicate reefs placed after 1988.

The Massachusetts ARP was formalized in 2008 with the completion of the Massachusetts Marine Artificial Reef Plan. The MA DMF Fisheries Habitat Program oversees all ARP developments. Prior to 2008, artificial reefing activity in Massachusetts consisted of a series of ad-hoc deployments for research pilot projects or mitigation. Four of the five Massachusetts permitted reef sites are less than 25 years old. The Dartmouth reef in Buzzard's Bay was created in 1997 using Reef Balls by the University of Massachusetts as a pilot research project. The Sculpin Ledge reef in Boston Harbor is a 1999 mitigation project designed using concrete terrace structures to address subtidal habitat loss at Spectacle Island resulting from the capping of a landfill using "Big Dig" project fill. The Boston Harbor HubLine reef was constructed in 2006 as mitigation for hard bottom habitat impacts resulting from the installation of the HubLine natural gas pipeline between Boston and Salem. The Harwich Reef in Nantucket Sound was created in 2016 using concrete recycled from the demolition of the local high school. The Harwich reef was a collaborative effort with the local charter boat captains and was the first reef project funded using revenue from Massachusetts Recreational Saltwater Fishing License sales. This is a recreation-only reef, with all commercial fishing activity prohibited through regulation enacted in 2016. The permit remains open to accept additional materials in the future.

Permits for the Yarmouth reef, Massachusetts' oldest AR originally created in 1978, were reissued in 2016 to allow additional material to be deployed in vacant areas of the 125-acre site. In 2019, derelict concrete navigation buoy moorings were donated and deployed by the United States Coast Guard (USCG) additional USCG deployments expected in the future. Additionally, 2,000 cubic yards of granite and concrete were added to the site, using funding by Massachusetts Department of Fish and Game's In-lieu Fee Mitigation Program to pay for deployment.

The Massachusetts ARP is currently focused on addressing three programmatic bottlenecks to help position the program for sustained success: permitting new sites, acquiring free materials, and securing funding for future deployments. Progress on ARP development is limited by the availability of funding and dedicated staff. A part-time coordinator oversees the ARP and utilizes staff from other programs to conduct reef-associated activities. Collaborations with local communities and other state agencies are utilized to secure free materials and to obtain new permits. All Massachusetts reef sites have established stations for collecting long term monitoring data, including acoustic monitoring of fish and bottom temperature data collection, to take advantage of ongoing efforts from other MA DMF projects to assist with reef monitoring.

Figure 1. USCG *Vessel Oak* deploying derelict concrete navigational aid "sinters" on the Yarmouth Reef in Nantucket Sound. Photo credit: Mark Rousseau, MA DMF.

Program Highlights

Completion of the Massachusetts Artificial Reef Plan in 2008 formally established guidance to direct future artificial reefing activities in Massachusetts. Dedicated funding for the program is limited for site selection and monitoring, requiring program staff to build on collaborative efforts with local and state agencies to secure materials of opportunity and funding for deployments. Despite these limitations, the ARP continues to make strides building reefs, siting new reef sites to permit, securing new materials of opportunity, and researching and monitoring existing reef sites.

Harwich Artificial Reef

Massachusetts's newest AR is the Harwich Reef in Nantucket Sound, deployed in 2016. The project was a collaborative effort between the Town of Harwich and MA DMF. The first deployment of materials consisted of 1,600 cubic yards of concrete rubble obtained from the demolition of the Old Harwich High School, deployed to create patch habitat arrays across a 10-acre site. MA DMF enacted a regulation prohibiting all commercial fishing activity on the reef site and within a 100-meter perimeter buffer zone. The regulation makes this the first and only reef site in Massachusetts dedicated exclusively to recreational saltwater fishing. The reef is very popular within the local community. The permit remains open to allow for the deployment of additional materials to the site.

Figure 2. Deployment of materials to the Harwich Artificial Reef site. Photo credit: Mark Rousseau, MA DMF.

Monitoring

MA DMF utilizes ARs as long-term monitoring stations to track movement of radio tagged finfish and horseshoe crabs using acoustic receivers, and for the collection of time series bottom temperature data in jurisdictional waters. Temperature data collection dates back to 2006 on some AR locations. MA DMF also conducts periodic sidescan sonar surveys of reef sites to verify material placement and stability. An Underwater Visual Census (UVC) survey using divers collects data on the HubLine mitigation reef in Boston Harbor annually to document long-term successional changes to both native and invasive species on AR habitat and compared to nearby natural, hard structured habitats. The UVC survey has been completed every July since 2006. In Nantucket Sound, a 2019 study using Baited Remote Underwater Video Stations (BRUVS) compared reef productivity of the Yarmouth and Harwich ARs, Massachusetts' oldest and newest ARs. Species richness, diversity, abundance, and age structure of economically important demersal fish species were compared to fish aggregations on nearby natural reefs and sand bottom habitats. The study identified an increase in abundance of reef-associated species with increases in reef age. Future research on reefs in Nantucket Sound will utilize BRUVS to assess structured habitat connectivity to determine appropriate spacing of new reefs to existing reefs and natural structured habitats. To complete AR monitoring studies, MA DMF has relied on volunteer services of recreational sport fishing clubs and graduate student interns to assist MA DMF's monitoring efforts, particularly in Nantucket Sound. In 2019, collaborations to complete BRUV research on Nantucket Sound reef sites included a Northeastern University's (NEU) Three Seas Program graduate intern and several members of the Cape Cod Salties who donated vessel time to MA DMF.

Figure 3. BRUV Research in Nantucket Sound. Photo credit: Simonetta Harrison, MA DMF intern/NEU.

Figure 4. Collaborative monitoring in Nantucket Sound with the Cape Cod Salties and NEU graduate intern. Photo credit: Mark Rousseau, MA DMF.

Site Selection

The success of the Harwich reef deployment in 2016 generated significant demand for the permitting of additional reef sites in Massachusetts. In 2017, MA DMF began assessing potential AR locations in structure-limited areas of lower Cape Cod Bay. To identify potential sites, information about existing benthic conditions was collected in three distinct phases: sidescan imaging acoustic surveys, underwater camera groundtruth imaging, and SCUBA diver transect monitoring. Over 12,000 acres of bottom were surveyed in four distinct locations using sidescan sonar. Survey locations were ranked based on absence

of structure, proximity to structure, and ideal bathymetric conditions. With the assistance of an NEU graduate intern, over 300 sediment photos and more than 5,000 linear feet of diver transect data were collected and analyzed to identify five potential new reef locations in lower Cape Cod Bay. If permitted, the five sites identified in Cape Cod Bay will double the number of ARs in Massachusetts jurisdictional waters.

Figure 5. Lower Cape Cod Bay sites selected for permitting. Image credit: Kristen Schmicker, MA DMF intern/NEU.

Material Acquisition

Reef sites with open permits are a desirable option for government agencies looking to donate suitable materials of opportunity for reefing as a means to recognize cost savings for large-scale infrastructure improvement projects when disposal debris can meet MA DMF reefing materials requirements. MA DMF is working with the Massachusetts Department of Fish and Game and the Massachusetts Department of Transportation to secure free materials of opportunity from large transportation upgrades such as the Massachusetts South Coast Railway Improvement project. Over 1,000 cubic yards of granite from more than 60 culvert and bridge infrastructure upgrades along the rail line have been donated to the MA DMF reef program for reefing. With no funding immediately available for material deployments, MA DMF has secured a temporary lease from the New Bedford Marine Commerce Terminal for staging the donated granite until deployment funding is secured. Additionally, MA DMF is collaborating with the USCG Stations Newport and Woods Hole to receive derelict navigation aid moorings, known as sinkers, to reef sites in Nantucket Sound. The USCG delivers and deploys materials to areas on the reef designated in advance by MA DMF at no cost to the state.

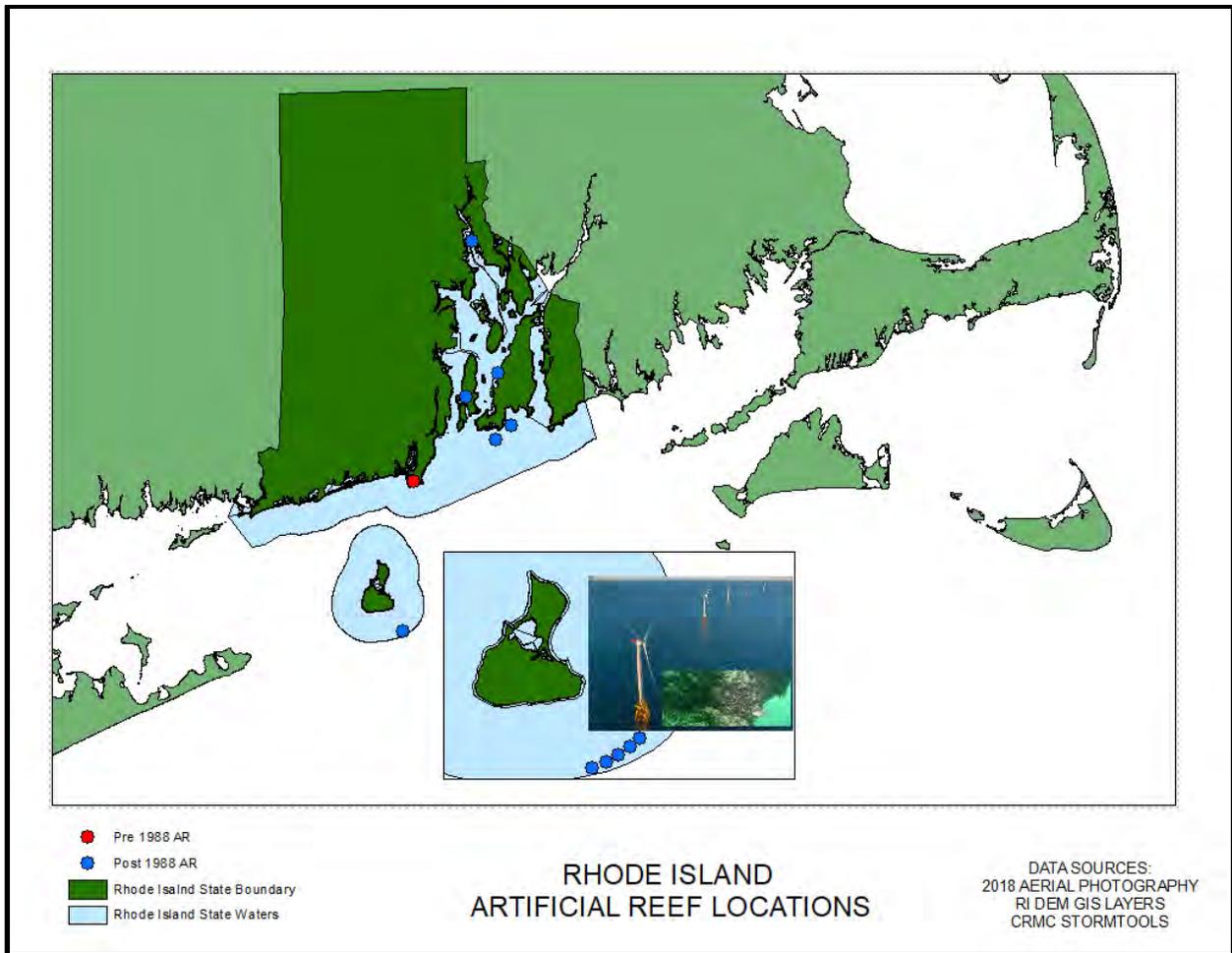
Future reef deployments will focus on barge loading of materials from coastal construction projects, with direct delivery to reef sites. In order for this to be a successful, economically feasible option, MA DMF will be required to maintain several open reef permits in several locations.

Figure 6. Material from the MA Department of Transportation South Coast Railway Project stored at the Clean Energy Center's Marine Commerce Terminal in New Bedford. Photo credit: Mark Rousseau, MA DMF.

RHODE ISLAND

Artificial Reef Program Overview

Artificial Reef Details	
Number of Permitted Sites	3 in offshore waters 4 in inshore state waters
Number of Mitigation Reefs	1
Program Details	
Artificial Reef Management Authority	New England Fishery Management Council, Rhode Island Department of Environmental Management Division of Marine Fisheries (RI DMF)
Average Annual Operating Budget	\$10,000
State Artificial Reef Plan	No official state plan, reviewing the current guidelines for artificial reef planning
Reef Coordinator	Patrick Barrett; Patrick.Barrett@dem.ri.gov
Shellfish Reef Program Contact (separate from the ARP)	Eric Schneider; Eric.Schneider@dem.ri.gov Patrick Barrett; Patrick.Barrett@dem.ri.gov
Artificial Reef Website, with list of deployments	http://www.dem.ri.gov/programs/marine-fisheries/surveys-pubs/habitat.php
Research Collaborations	<p>Sheehy, D. 1976. Utilization of artificial shelters by the American lobster (<i>Homarus americanus</i>). Journal of the Fisheries Research Board of Canada 33: 1615-1622.</p> <p>Sheehy, D.J. 1982. The use of designed and prefabricated artificial reefs in the United States. Marine Fisheries Review 44(6-7): 4-15.</p> <p>Castro, K.M., J.S. Cobb, R.A. Wahle & J. Catena. 2001. Habitat addition and stock enhancement for American lobsters, <i>Homarus americanus</i>. Marine and Freshwater Research 52(8): 1253-1261.</p>



ARs in Rhode Island. Red circles indicate reefs placed before 1988, and blue circles indicate reefs placed after 1988.

State of the Rhode Island Artificial Reef Program

ARs were first deployed in Rhode Island waters during the early 1970s. During this time there was no state sponsored ARP, but the state supported research projects undertaken by the University of Rhode Island (URI) to investigate the use of pre-fabricated concrete modules as a tool to increase species specific abundance in otherwise unstructured benthic marine habitat (i.e. sand bottom). Specifically, this work focused on determining if ARs can be used as a tool to increase the carrying capacity of lobsters in areas devoid of natural shelter. The results suggested that these species-specific modules were readily occupied by lobster and can significantly increase the abundance of lobster at certain locations (Sheehy 1976). These lobster modules were the only ARs on record in Rhode Island at the time of the ASMFC's 1988 *Profile on Artificial Reef Development*. Findings from this work provided promising results and garnered the state's interest in ARs as a fisheries management tool. However, AR planning and development did not expand until the late '90s.

Figure 7. Lobster occupying two-piece single-chamber shelter, and map of lobster module enhancement areas as cited in Sheehy 1982 and 1976 respectively.

In 1997, a second AR project conducted by the University of Rhode Island was developed with the same purpose of improving the stock of American lobster. Instead of pre-fabricated modules, this deployment consisted of six reefs split into two grades of cobble stone (10-20 cm and 20-40 cm) deployed off the western side of Jamestown, near Dutch Island (Castro et al. 2001). Castro found that the ARs increased the abundance of adult lobsters relative structured and unstructured habitat controls. The success of these two reefs provided the state with more confidence that the implementation of ARs can be used as a successful management tool. Not too long after, ARs returned to Narragansett Bay as part of a mitigation measure taken by the U.S. Navy post remediation of the McAllister Point Landfill. From 1955-1970s, the McAllister Landfill accepted all waste from the Newport Naval Station. In 1989, the landfill, in conjunction with other sites on the base, were included on the Environmental Protection Agency's (EPA's) National Priority List. As a post remediation mitigation measure, specifically post-dredging of the nearby marine sediment, the U.S. Navy was required to conduct post-eelgrass restoration and AR enhancement work at the sites dredged and backfilled during the remediation work. While some projects arise out of a necessity to react, others arose more opportunistically.

In 2003, the Rhode Island Department of Transportation (DOT) started to plan the removal of the Old Jamestown Bridge that was closed after the completion of the Jamestown-Verrazano Bridge in 1992. Since the bridges spanned the east passage of Narragansett Bay, Rhode Island was presented with a unique opportunity to repurpose this old bridge material as an AR, which proved to be a more cost effective option than landfill disposal. The demolition of the Old Jamestown Bridge began in 2006 and with funds acquired by the Rhode Island DOT from the Federal Highway Administration, the state was able to construct two ARs, Gooseberry Island and Sheep Point Reef, in nearshore waters off the coast of Newport. In addition to the recycled bridge materials (i.e., concrete slabs, rebar, concrete rubble) these ARs were improved by cryptic habitat units that enhanced vertical relief and protected juvenile and cryptic fishes.

Figure 8. The through truss span of the Old Jamestown Bridge, just before it hits the water following the first controlled explosive demolition in 2006.

Currently, there is no official ARP but a draft guideline for AR planning in Rhode Island was developed by Rhode Island Division of Marine Fisheries (RI DMF) in conjunction with a 2013 permit application for a reef ball project in estuarine waters. The project permit was withdrawn but the document and AR site suitability analysis stands as the most up to date plan for AR enhancement in the state. This work is currently being reviewed and considered for potential improvements in order to adopt into an official plan state plan.

Currently, all habitat restoration falls under one of two programs, either the Shellfish Restoration Program or the Fish Habitat Enhancement Program. AR work is conducted under the Fish Habitat Enhancement Program consisting of a couple members of the state's Habitat Team. Since last year, the RI DMF Habitat Team has continued to monitor essential fish habitat (EFH) such as oyster reefs, eelgrass, and kelp, in addition to siting potential locations for AR work. Over the last four years the team, in collaboration with The Nature Conservancy, has been using a combination of monitoring techniques (e.g. multi gear surveys, benthic video monitoring, and dive surveys) to determine suitable locations for fish habitat enhancement projects in the Upper Narragansett Bay and Providence River. This research has led to the first permitted AR project specifically aimed towards enhancing fish habitat since 2006. Deployment of the Sabin Point AR project was completed in October 2019.

Program Highlights

Jamestown Bridge Artificial Reef Project

Gooseberry Island and Sheep Point reefs were completed in August 2007. The main goal of the work was to enhance inshore, flat sandy bottom habitat, with more complex structure with the understanding that these improvements to the benthic structural complexity will likely result in increased fish biomass, juvenile fish abundance, and provide additional recreational fishing and scuba diving opportunities in Rhode Island. These reefs were constructed in 65-85 feet of water on sandy, unstructured, habitat, and surveyed via transect methods on SCUBA. In addition to these materials, cryptic habitat units were deployed and hauled at various intervals to measure the colonization of cryptic and juvenile finfish species.

Figure 9. Cryptic habitat units prior to be deployed. Photo credit: Natasha Pinckard.

Sabin Point Artificial Reef Project

The goal of this project is to enhance fish abundance at a site, which currently provides fishing access but supports a moderate-low fish abundance. This work aims to enhance the size and abundance of targeted species (e.g. scup, tautog, black sea bass), as well as support juvenile fish and prey species by adding structure to relatively featureless bottom habitat to a location in close proximity to a local fishing pier. The project site has been carefully chosen to balance the goal and objectives of the project while taking into consideration the environmental constraints, logistics of implementation, and competing uses. This is the first AR project since 2006, and the first AR to use Reef Balls in Rhode Island.

Figure 10. AR being deployed at Sabin Point. Photo credit: Grace Kelly, ecoRI.

Artificial Reef Productivity Monitoring

As AR work continues to grow in Rhode Island, DMF is looking to identify the best monitoring methods to evaluate the success of their AR work. DMF will be using the Sabin Point project as a pilot study for the use of Reef Balls in Rhode Island waters, as well as to identify monitoring guidelines for future AR projects. DMF is also interested in determining the relative habitat value produced by creating ARs in the bay, both from a biological and social standpoint. DMF intends to utilize a dive transect monitoring protocol that is designed to sample common algae, invertebrates, and fish species to monitor changes to AR habitats over time. From this work they will establish fish habitat linkages by comparing productivity estimates on AR in relation to sand flat controls, and other important finfish habitats (e.g. oyster reefs, kelp, eelgrass). In addition to the biological surveys DMF is also interested in conducting recreational angler interviews to see how perception of the park, and the fishing opportunity, has changed at Sabin Point since the creation of the AR.

CONNECTICUT

Artificial Reef Program Overview

Artificial Reef Details	
Number of Permitted Sites	1 (in inshore state waters)
Number of Mitigation Reefs	1
Program Details	
Artificial Reef Management Authority	Connecticut Department of Energy and Environmental Protection, Fisheries Division, Marine Fisheries Program (CT DEEP)
Average Annual Operating Budget	\$0
Reef Coordinator	David Molnar; David.Molnar@ct.gov
Shellfish Reef Program Contact (separate from the ARP)	David Carey; David.Carey@ct.gov
List of deployments	https://www.nfwf.org/sites/default/files/finalreports1/1401.13.03_9429-final_report.pdf

State of the Connecticut Artificial Reef Program

ARs were first deployed in Connecticut waters in 2014. During this time there was no state sponsored AR program, but the state authorized research projects undertaken by Sacred Heart University (SHU) to investigate the use of pre-fabricated concrete modules “Pallet Reef Balls” and native vegetation as a tool to decrease erosion of intertidal sediments and restore intertidal wildlife habitats. Specifically, this work focused on determining if ARs can be used as a tool to reduce wave action and stabilize the shoreline, subsequently aiding in marsh grass restoration and species recolonization. The results suggested that wave energy has been reduced and sedimentation has increased (NFWF 2018).

Program Highlights

Stratford Point Living Shoreline Project

Stratford Point was formerly owned by Remington Gun Club for 50 years and was used as a gun firing range, subsequently leading to lead pollution in the intertidal shoreline from the bullets. DuPont acquired the land and conducted remediation efforts in the early 2000s to remove the pollution, however, in the process, the cleanup disturbed the intertidal habitat. In 2011, Dr. Mattei, Professor at SHU, became involved in Stratford Point’s ecological system.

Pallet Balls were installed at Stratford Point Living Shoreline in May 2014. The main goal of the work was to protect coastal shorelines from storm-generated erosion (NFWF 2018). The deployment of 64 Pallet Balls helped improve the benthic habitat, serving as substrate for marine organisms such as juvenile finfish, oysters, barnacles, algae, sponges, clams, snails, and crabs. The installation of smooth cordgrass (*Spartina alterniflora*) helped the establishment of a fringe marsh and provided additional wave attenuation. These reefs were constructed during low tide, approximately 18 meters seaward of the mean high water elevation. As part of the project, and per requirements of the state's Certificate Permission, subsequent monitoring of abiotic and biotic data was collected for five years to determine if the living shoreline was successful in terms of increasing coastal resilience over time. Presently, the attenuation of wave energy has been reduced by 30% and within the first year of the installation, 15 cm of sediment accreted landward of the Pallet Balls (NFWF 2018).

Funding for this project was provided by U.S. Army Corps of Engineers (USACE) Connecticut In-Lieu Fee Program (\$250,000), Connecticut Institute for Resilience and Climate Adaptation (CIRCA) Matching Funds (\$91,000), and Long Island Sound Futures Fund (\$115,198). The leading stakeholders involved in this project are SHU professors, DuPont, Connecticut Audubon Society and National Audubon Connecticut, AECOM (formerly URS) and CIRCA.

Figure 11. Need caption and photo credit, and possibly higher quality photo.

Figure 12. Need caption and photo credit, and possibly higher quality photo.

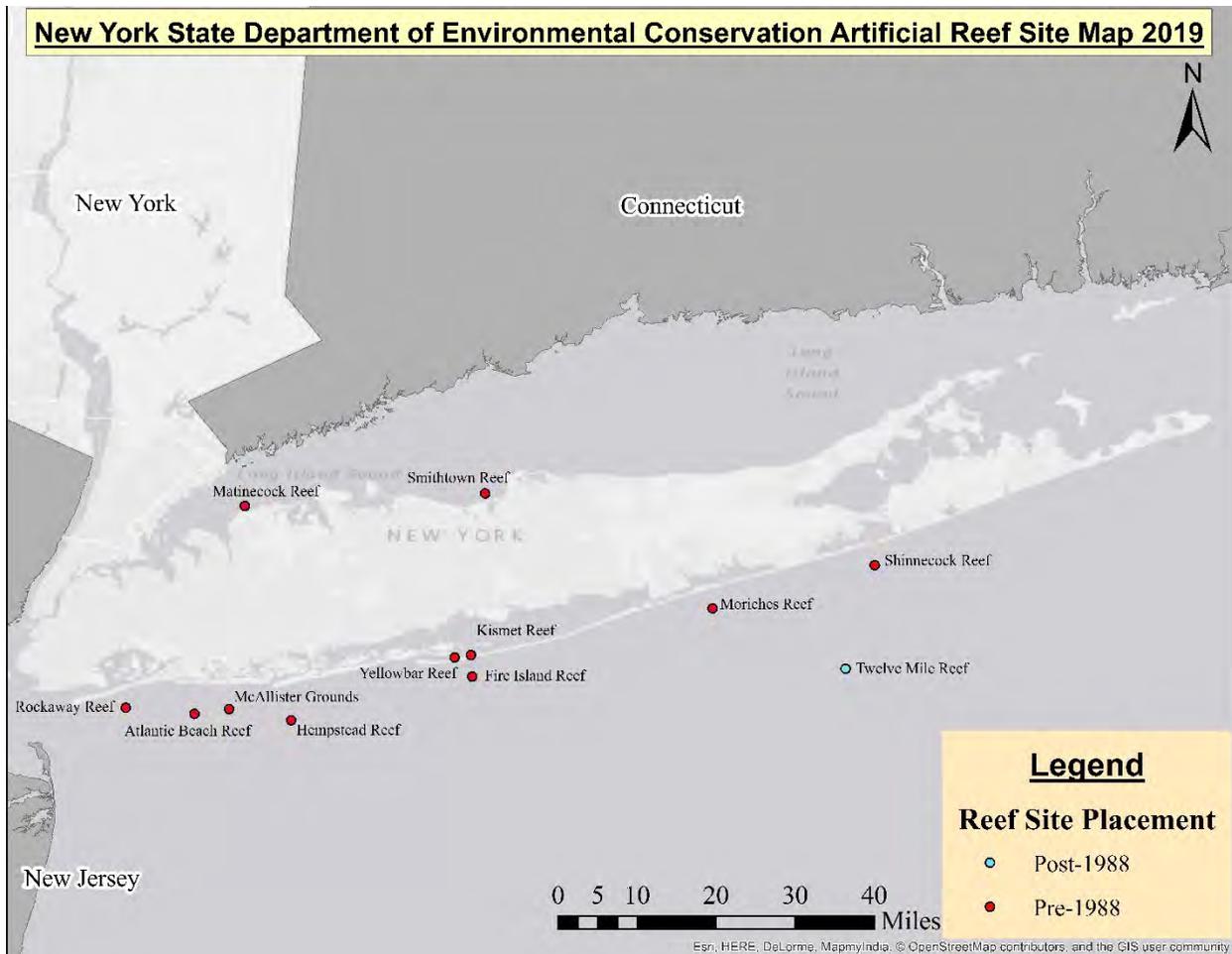
Reference

National Fish and Wildlife Foundation (NFWF). "Final Programmatic Report Narrative" 23 Dec. 2019, http://www.nfwf.org/finalreports1/1401.13.039429-final_report.pdf

NEW YORK

Artificial Reef Program Overview

Artificial Reef Details	
Number of Permitted Sites	3 in federal waters (2,007 acres) 5 in offshore waters (1,321 acres) 4 in inshore waters (61 acres)
Number of Mitigation Reefs	0
Program Details	
Artificial Reef Management Authority	New York State
Average Annual Operating Budget	\$0
Artificial Reef Plan	https://www.dec.ny.gov/docs/fish_marine_pdf/dmrreeffsgeis.pdf
Reef Coordinator	Christopher LaPorta; Christopher.LaPorta@dec.ny.gov
Shellfish Reef Program Contact (separate from the ARP)	Debra Barnes; debra.barnes@dec.ny.gov
Map of deployments	https://www.dec.ny.gov/docs/fish_marine_pdf/dmrreeffsgeis.pdf
Artificial Reef Website	https://www.dec.ny.gov/outdoor/7896.html



ARs in New York. Red circles indicate reefs placed before 1988, and blue circles indicate reefs placed after 1988.

State of the New York Artificial Reef Program

The New York State Department of Environmental Conservation (NYSDEC) ARP was established in 1962 to enhance and restore fisheries habitat as part of New York State’s Marine Fisheries Management Program and provide additional fishing and diving opportunities.

A Generic Environmental Impact Statement and Plan for the Development of Artificial Reefs in New York’s Marine and Coastal District (GEIS/Reef Plan) was written by NYSDEC in 1993 to establish programmatic guidelines and goals and to secure permits authorizing the construction, repair and maintenance of ARs in both New York and adjacent federal waters.

The GEIS/Reef Plan was updated through the completion of a Supplemental GEIS/Reef Plan (SGEIS). The SGEIS was completed in 2020 and addressed the advancements in science and knowledge surrounding AR development and the programmatic questions raised in the 1993 GEIS. The SGEIS will be an integral part of the ARP’s path forward toward significantly increasing overall reef area through the expansion of existing sites and the creation of new sites.

The ARP maintains 12 reef sites in New York's Marine and Coastal District including eight sites in the Atlantic Ocean, two in Great South Bay and two in Long Island Sound. All but one site (Twelve Mile Reef) were permitted prior to 1988 (see map). Reef sites are strategically positioned in proximity to major inlets for increased boating access.

Program compliance and performance monitoring of the sites is conducted through aerial surveys, SCUBA, bathymetric surveys, remote operated vehicle (ROV), trap surveys, and contracted biological monitoring surveys. Supplemental monitoring information is also received through volunteer angler and diver surveys.

Materials of opportunity are utilized to create patch reefs on ARP sites. Reef building materials that have been used include, but are not limited to, rock (dredged and jetty), concrete (pipes, blocks, slabs, bridge decking, rubble), steel (vessels, barges, pipe, buoys, automobile bodies), wood (drydocks, barges, vessels) and tires. A majority of these materials were used because of their abundance and availability. Over time performance monitoring determined which materials proved to have superior reef building characteristics (stability and durability) for sustained use. Car bodies and tires are no longer used by the ARP due to their poor performance as reef material. In the past other available and abundant materials such as wood (barges and vessels) have been predominantly replaced by the significantly more stable and durable rock and steel.

Historically, the ARP had no dedicated budget to acquire, prepare and deploy materials on its sites. Some project and monitoring funding has been secured through the New York State Environmental Protection Fund.

A majority of deployed materials have been acquired through ARP partnerships. Federal agencies, such as the USACE and the National Marine Fisheries Service (NOAA Fisheries) have donated reef building materials ranging from large volumes of dredge rock to steel fishing vessels.

Other partnerships with construction companies have produced large volumes of material (concrete and steel) from demolition projects where reefing was more economically feasible than alternate disposal methods. Additional reef building collaborations were forged with local fishing clubs and saltwater angler based organizations (Fisherman and Fishing Line magazines) through specific reef site sponsorship.

Perhaps the most significant challenge encountered by the New York ARP has been the increased value of and preparation cost for reef building materials that were once readily available and commonly used. A key factor has been the exorbitant increase in scrap steel value making acquisition of steel vessels, barges, and pipes among other steel products onerous due to greater scrapping value.

Program Highlights

Atlantic Beach Reef

The most significant ARP material deployment was the result of a successful partnership with New York District USACE during an ongoing New York Harbor Channel Deepening Project. This project produced large volumes of dredged bedrock from New York Harbor to allow deep draft vessels access to the Port

of New York. The partnership was a “win-win” for the USACE, who aquatically recycled large volumes of disposal material, and the ARP who gained large volumes of high-quality reef building material at no cost.

Reef placements occurred from 1998 through 2001 producing over 200 deployments yielding approximately 600,000 cubic yards of rock. To date this is the largest patch reef created in ARP history located on the Atlantic Beach Reef.

After blasting and dredging, the rock was loaded into hopper barges and towed to a series of designated target coordinates on the Atlantic Beach Reef for deployment. The rock drops created an extended patch reef that defines the northern boundary of the site easily located by the large number of vessels frequenting it.

The Atlantic Beach Reef “rockpile” remains one of the most popular and frequented destinations to date as is evidenced by the photo of the “rack-line” of boats enjoying the fishing and diving opportunities this massive patch reef offers.

SCUBA monitoring of this large reef has documented a considerable number of large interstitial spaces that could easily house a “double-digit” lobster or tautog!

Figure 13. Insert vessel lineup photo here.

Figure 14. Insert lobster in rocks photo here.

Figure 15. Insert photos of rock topside.

Moriches Anglers Reef

The largest vessel deployed by the New York ARP began its life as a 167-foot steam freighter. The vessel currently known as *The Boat* went by many prior monikers such as *Philip J*, *SS Newport*, *Boulogne Sur Mer*, and *Bad Bob’s Big Boat* before going to its final resting place on the Moriches Anglers Reef.

The original steam freighter was gutted and converted into the floating Four Star French Restaurant *SS Newport* that was berthed in Newport Harbor, Rhode Island for 10 years. When the *SS Newport* fell on hard times it was sold and converted into its final incarnation as the floating Nightclub *Bad Bob’s Big Boat* berthed in Newport Harbor for 20 years. *Bad Bob’s Big Boat* had a colorful reputation as an upper-class destination but eventually declined and became a hangout for rowdy crowds. Over time the Newport City Council issued an eviction notice for the vessel and eventually a settlement spelled out terms for *The Boat’s* removal from Newport Harbor. The last owner of *The Boat* was a SCUBA diver who was familiar with the New York ARP. He contacted the ARP and offered to donate the vessel. The vessel’s dimensions of 167-feet long, 27-foot beam, and 25-foot keel made it a good candidate for reefing.

Local divers have reported that *The Boat* rests on its keel in 70 feet of water on the Moriches Anglers Reef. The large voids and open decks of *The Boat* have been documented to hold large numbers of tautog, black sea bass, and scup. This patch reef remains one of the more popular diving destinations of the New York sites due to its size.

The project was sponsored by the local fishing club The Moriches Anglers who adopted the Moriches Anglers Reef because many club members frequented the site to fish and dive. Over time members of

the club created the not for profit organization Moriches Offshore Reef Fund (MORF) that was ultimately responsible for improving over half the reef site with patch reefs primarily in the form of steel vessels and barges preferred by club members. MORF's long-term sponsorship of the Moriches Anglers Reef has been the most successful single site sponsor partnership with the New York ARP to date.

Figure 16. Insert above and under water photos of "The Boat" here.

Governor Cuomo's Reef Initiative/Tappan Zee Bridge

Demolition of the Tappan Zee Bridge and the resulting opportunity to "aquatically recycle" materials to reduce landfill burden produced significant changes for the ARP. Starting in 2018 Governor Andrew Cuomo's Artificial Reef Initiative (Reef Initiative) rejuvenated the ARP through the provision of resources, acquisition and deployment of unprecedented volumes of surplus reef building materials located throughout New York. Materials were received from the following state agencies: New York Power Authority (NYPA), New York Thruway Authority (NYTA), New York Department of Transportation (NYDOT) and New York Canals Corporation (NYCC). The New York City (NYC) Department of Transportation, National Grid (NAGD) and the USACE also contributed materials to the Reef Initiative.

The concerted multi-agency Reef Initiative effort resulted in the first ever deployment of materials onto all 12 New York reef sites from 2018 through 2019 totalling nearly 100 individual patch reefs.

Materials recycled through the Reef Initiative included surplus NYCC steel vessels and barges, NYPA and NAGD power producing equipment (steel rotors and turbines), NYDOT concrete and steel bridge and highway demolition materials and NYTA steel trusses and concrete supports and decking from Tappan Zee Bridge. All materials were either transported over land or via waterways (Erie Canal and Hudson River) to New York's Coastal Marine District for deployment.

One Reef Initiative project of interest was the result of a marine contractor who used a variety of NYCC materials to create a steel sculpture. The sculpture design was made from various steel parts (miter gate, lift bridge section and pontoons) welded together with the understanding that greater surface area and increased profile are important characteristics for reef building success. The fabricated sculptures produced large surfaces of attachment for marine colonizers with increased conduit for water flow resulting in enhanced shelter and foraging opportunities for various reef-associated species.

In addition to the imaginative reef material design, a new method of material deployment was devised and named the "slip-and-slide." This method employed large spare steel I-beams welded together to form a movable base. The sculptures and other reef materials (70-ton steel turbine runners) were placed on this base for overboard deployment. A large crane was used to control lifting of the onboard section of the "slip-and-slide" until the materials literally slipped off and over the side of the barge. The attached photographic sequence illustrates the deployment of the steel bridge/miter gate/pontoon sculpture off the "slip and slide."

Figure 17. Insert Mitergate/liftbridge/pontoon sequence here.

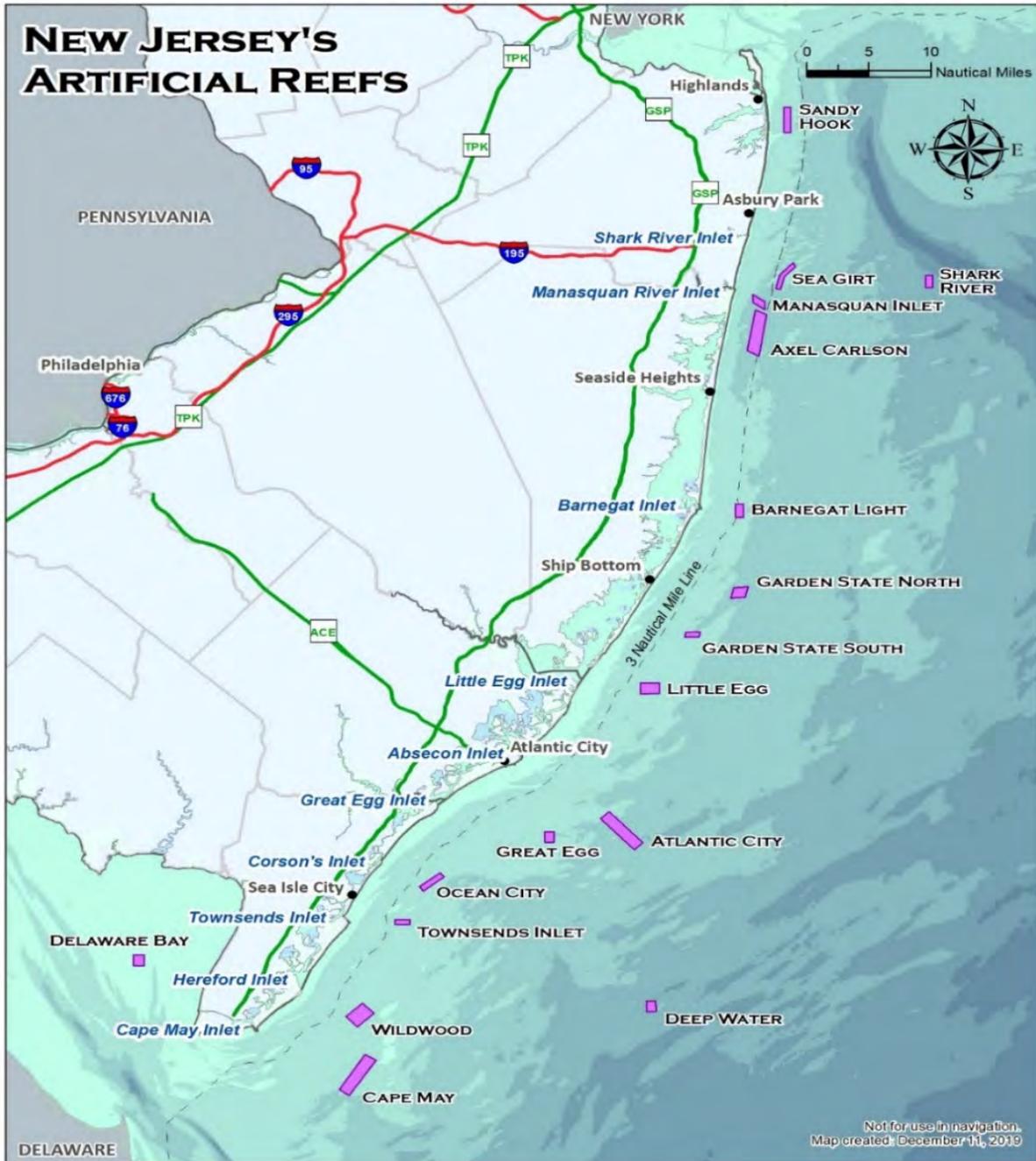
Figure 18. Insert 70-ton steel turbine sequence here.

NEW JERSEY

Artificial Reef Program Overview

Artificial Reef Program Overview

Artificial Reef Details	
Number of Permitted Sites	14 in federal waters 4 in offshore state waters
Number of Mitigation Reefs	0
Program Details	
Artificial Reef Management Authority	New Jersey Division of Fish and Wildlife (NJDFW) ARP
Average Annual Operating Budget	\$180,000 plus donations
Reef Coordinator	Peter Clarke; Peter.Clarke@dep.nj.gov
Artificial Reef Website	https://www.nj.gov/dep/fgw/artreef.htm



ARs in New Jersey. The 17 reef sites are depicted in purple shaded symbols, four occur in state waters (0-3 nm), 14 are in federal waters (3-200 nm). The gray dotted line indicates the state waters boundaries.

State of the New Jersey Artificial Reef Program

In 1984, NJDFW initiated its ARP with permitting through USACE in order to develop a hard-bottom habitat that is beneficial to marine life. This permitting provided the development of an AR system with standardized oversight using best environmental practices. NJDFW started with four reef locations: the

Sea Girt Reef off Monmouth County, the Garden State North and Garden State South reefs off Long Beach Island in Ocean County, and the Atlantic City Reef off Atlantic County. By 1994, the network increased to include a total of 14 permitted reef sites ranging from Sandy Hook to Cape May. An additional reef was added in 2005, with two more added in 2017, bringing the total to 17 reef sites covering 7.8%, or 35 square miles, of seafloor managed by NJDFW at present. With over 4,300 deployments made over the 17 reef sites, 91% of the total permitted area is still undeveloped. Four of the reef sites are located inside of the three-mile state waters territory, while the remaining 13 sites are in federal waters (see map of ARs above). New Jersey has one estuarine reef site located in the Delaware Bay.

Historically, ARs have been constructed out of a wide range of materials, but recently they have been limited to three material types: steel, rock, and concrete. Steel is generally acquired as ex-fishing vessels, barges, tug boats, army tanks, and subway cars that are no longer considered suitable for their intended use. Rock is often provided through many river and port deepening projects and consists of the largest quantity of material encountered during the project period, preferably larger than a basketball and frequently bigger than a car. Concrete typically originates from bridge decommissioning projects, old piers and pilings, road culverts, and other pre-cast material. Rather than these materials going to recycling, NJDFW is able to repurpose them to create new underwater habitat. All material is inspected for suitability before it is deployed. If determined fit for deployment, it is cleaned and prepared using the best environmental practices.

Program Highlights

Monitoring

Currently, NJDFW is conducting an independent fixed gear reef survey on three reef sites within the New Jersey reef network. This project was initially a collaborative effort with Rutgers University for years one through three and is now conducted entirely by New Jersey. Sampling includes three seasons consisting of five-week sampling events equating to a total of 15 weeks of trap hauls per year. Reefs sampled include Sea Girt, Manasquan Inlet, and Little Egg Inlet reefs. Measurements include the initial absence of marine life and evaluating the rate of presence as fish species develop on the material, enumerating species as development occurs, weighing and measuring all species collected. Sampling techniques include video recordings, side scan sonar, and fixed gear with bottom temperature monitoring.

Funding

The NJDFW ARP receives funding through two sources. The operating budget for staff salaries and fringe/indirect benefits including monitoring and supplies averaged over five years is roughly \$180,000 of Sport Fish Restoration Funds. All funds for material acquisition, preparation, and deployment are supplied by outside sources from sport fishing clubs and environmental advocacy groups.

Recent Deployments

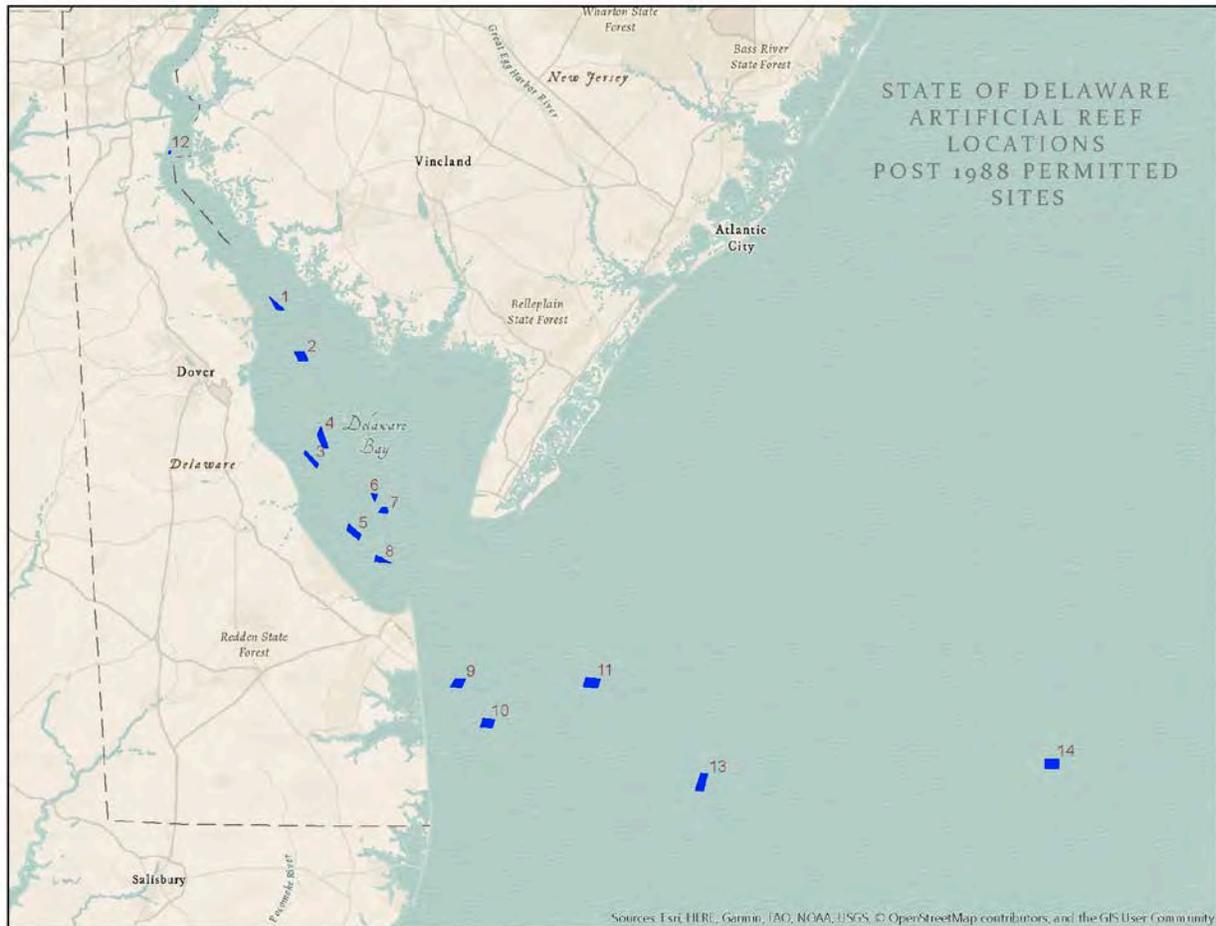
In 2019, the New Jersey ARP performed eight deployments; these included two Reef Ball deployments on the Ocean City Reef; three barges on the Townsends Inlet Reef; two Caisson Gates, one on the Atlantic City Reef, the second on the Cape May Reef; and a concrete bridge rubble deployment on the

Townsend's Inlet Reef. In total, material deployed in 2019 equaled roughly 5,000 cubic yards of new habitat.

DELAWARE

Artificial Reef Program Overview

Artificial Reef Details	
Number of Permitted Sites	5 in federal waters 9 in inshore waters
Number of Mitigation Reefs	2: USACE Mitigation Reef and Public Service Electric and Gas reef deployment funding
Program Details	
Artificial Reef Management Authority	Delaware Division of Fish and Wildlife (DE DFW); permitting under USACE (federal waters) and Delaware Division of Water, Wetlands and Subaqueous Lands Section (state waters)
Average Annual Operating Budget	\$600,000 plus additional funding for large projects.
Reef Coordinator	Jeff Tinsman; Jeffrey.Tinsman@delaware.gov
Artificial Reef Website	http://www.dnrec.delaware.gov/fw/Fisheries/Pages/ArtificialReef
List of Deployments	http://www.dnrec.delaware.gov/fw/Fisheries/Documents/2015-16%20DELAWARE%20REEF%20GUIDE.pdf



ARs in Delaware. All were permitted post-1988.

State of the Delaware Artificial Reef Program

Delaware was the last state along the Atlantic coast between New York and Texas to initiate a state-sponsored reef program, with development starting in 1995. Most of Delaware’s salt water access is along Delaware Bay and most reef sites (8 of 14) are estuarine. Delaware uses materials of opportunity such as concrete products and retired vessels as reef materials. Concrete piles deployed from an anchored barge are stable after initial settling and provide a high profile. All types of concrete are very durable, gaining strength over time. Delaware Bay provides foraging and breeding habitat for tautog and juvenile habitat for black sea bass, as well as seasonal habitat for flounder, triggerfish, scup, spadefish, croaker and a variety of pelagic types. The cost of production of donated concrete products is used to provide the required 25% match for federal Sport Fish Restoration funding. Match from concrete donations is more than enough to match the cost of the concrete deployment and excess can be used for vessels and other materials which do not generate match. Since December 2017, Delaware has been receiving rock from the Delaware Main Channel deepening project. Both bedrock and glacial rock have been placed on sites four, six and seven in Delaware Bay. To date, more than 2.1 million tons of granite have been placed on these sites. Benefits go beyond enhanced fishing as this habitat should enhance

the growth and survival of estuarine-dependent juvenile black sea bass. Black sea bass are not harvested in Delaware Bay, but at ocean sites after they recruit into the recreational size category (12.5 inches). Delaware's ocean sites are the resting place for retired vessels of various sizes as well as non-traditional materials like retired NYC subway cars. Black sea bass, tautog and summer flounder are most commonly caught on these sites. Delaware uses a variety of monitoring efforts to characterize various aspects of the reefs. Periodic sidescan sonar surveys are used to ensure permit compliance for materials deployed and remaining stable on the reef. Diver sampling of the invertebrate community can be used to estimate the food resources available to fish, compared with the natural bottom. A randomized aerial flight survey estimates fishing effort on each site and these data are used to estimate the economic value of the reef program to the coastal economy of the tristate region, about \$7 million/year in recent years. Delaware does not use state employees, prison, or volunteer labor to operate the program, but contracts with a marine contractor. For many years the reef program operated with annual projects. In 2018, DE DFW switched to a five-year federal aid project and issued a request for proposals (RFP) seeking a marine contractor to do all concrete work, and to find, purchase, prepare, clean, tow, and deploy mutually agreed upon vessels. Each vessel just requires an addendum to the five year contract, which runs concurrent with the federal aid project. This five year format allows more time to generate match, which must be used in the project segment in which it is generated and the five year contract for the reef contractor eliminates the repetitious need to write a new contract for each project. With a steady funding source and a contractor dedicated primarily to reef work, Delaware has one of the most active reef programs along the Atlantic coast.

Program Highlights

Use of Non-traditional Materials

Reef materials should be thought of as having common characteristics, like stability, durability and being non-toxic. Materials not stable are subject to moving off the permitted site in storms. Materials not durable enough to last decades would be hard to justify the cost of deployment. Toxic materials will harm the environment. All of Delaware's usual materials, like concrete and steel ships, meet these criteria. When something different is offered it should be judged against these measures. In 2001, NYTA was retiring about 1,500 1960s vintage subway cars, painted red and nicknamed "Redbirds." These contained small amounts of non-friable asbestos, making remediation and recycling prohibitively expensive, so they were offered to the Atlantic coast reef programs. Delaware was able to effectively make the argument that asbestos was not an issue in the marine environment, and by comparison to a few Southeastern Pennsylvania Transit Authority cars surviving on a New Jersey reef site, that stability and durability were adequate. Delaware held a public meeting with National Oceanic and Atmospheric Administration (NOAA) and EPA representatives and local and regional environmental groups invited in order to educate the interested public. In the end, there was no opposition, and Delaware became the first of five states to accept cars, and did so early enough to make the project viable. After two rounds of deployments (2001-2003 and 2007-2009) Delaware accepted 1,329 cars and Site #11 (Redbird Reef) went from bare bottom to fully developed. This is one of the most successful of Delaware's reef projects. A huge amount of reef material was deployed at no cost to the program in a short amount of time. The value of the donation of effort to clean the cars and barge them to Delaware was over \$8 million and this provided match for other reef projects for 15 years.

Three State Effort (Delaware, New Jersey, and Maryland) to Sink the Retired Destroyer *Arthur W. Radford*

In early 2009, the U.S. Navy announced that they would make a retired 653 foot Spruance-class destroyer (*Arthur W. Radford*) available to the reefing community. This opportunity was rumored by 2006 and allowed time for planning and preparation. Delaware and New Jersey reef personnel got permission to tour the vessels, docked in Philadelphia. The states invited a marine contractor to join in order to get an idea of preparation costs and the volume of non-ferrous metals onboard, which would mitigate costs. Delaware had two deeper water reef sites permitted in 2006, to accommodate the vertical profile of a destroyer. These sites were selected to be nearly equidistant from Indian River Inlet (Delaware); Cape May, New Jersey; and Ocean City, Maryland. With joint development by three states as a goal, the sites were named Del-Jersey-Land Inshore (135 feet deep) and Offshore (190 feet deep). Delaware, being the permit holder was the lead agency. Delaware had to change its policy of not accepting title until after sinking, in order to comply with the U.S. Navy's policy of always transferring title to a state. This situation necessitated that the ARP deal with the State Insurance Commissioner regarding liability insurance. This was paid by the state with no cost to the Delaware ARP. In order to meet the rigorous application schedule, the three states had to tour the vessels again, advertise for a marine contractor and include them in the tour, issue an RFP to interested contractors, review and rank the proposals, then submit the winning bid with our application for the vessel to the U.S. Navy. There was much back and forth prior to the awarding of the vessel, including preparing an EFH Assessment. In June 2010, the *Radford* was moved to a private dock in the Philadelphia Navy Yard for preparation and the title passed to Delaware. One of DE DFW's goals was to show that properly done, large vessel projects need not take nearly a decade to complete, or cost \$5-10 million, as has been the case with some other large vessel projects in other locations in the past. In our case, the *Radford* was sunk on August 10, 2011, 15 months after Delaware accepted title. Cost was less than \$1 million, shared between Delaware, New Jersey, Maryland and the U.S. Navy. It is the longest vessel ever reefed in the Atlantic. Delaware was able to make this project work because they had an adequate reef site previously permitted; the vessel was docked in Philadelphia, minimizing the cost of towing; and it was relatively clean, having been built toward the end of the polychlorinated biphenyl (PCB) era. The contractor, American Marine Group, was a dedicated, experienced group specializing in reef development and intimately familiar with the Best Management Practices for preparing vessels for reefing. They performed all tasks from clean-up to creating diver safe spaces to towing and sinking, rather than subcontracting many tasks.

A Great, Once in a Generation Windfall from Another Project

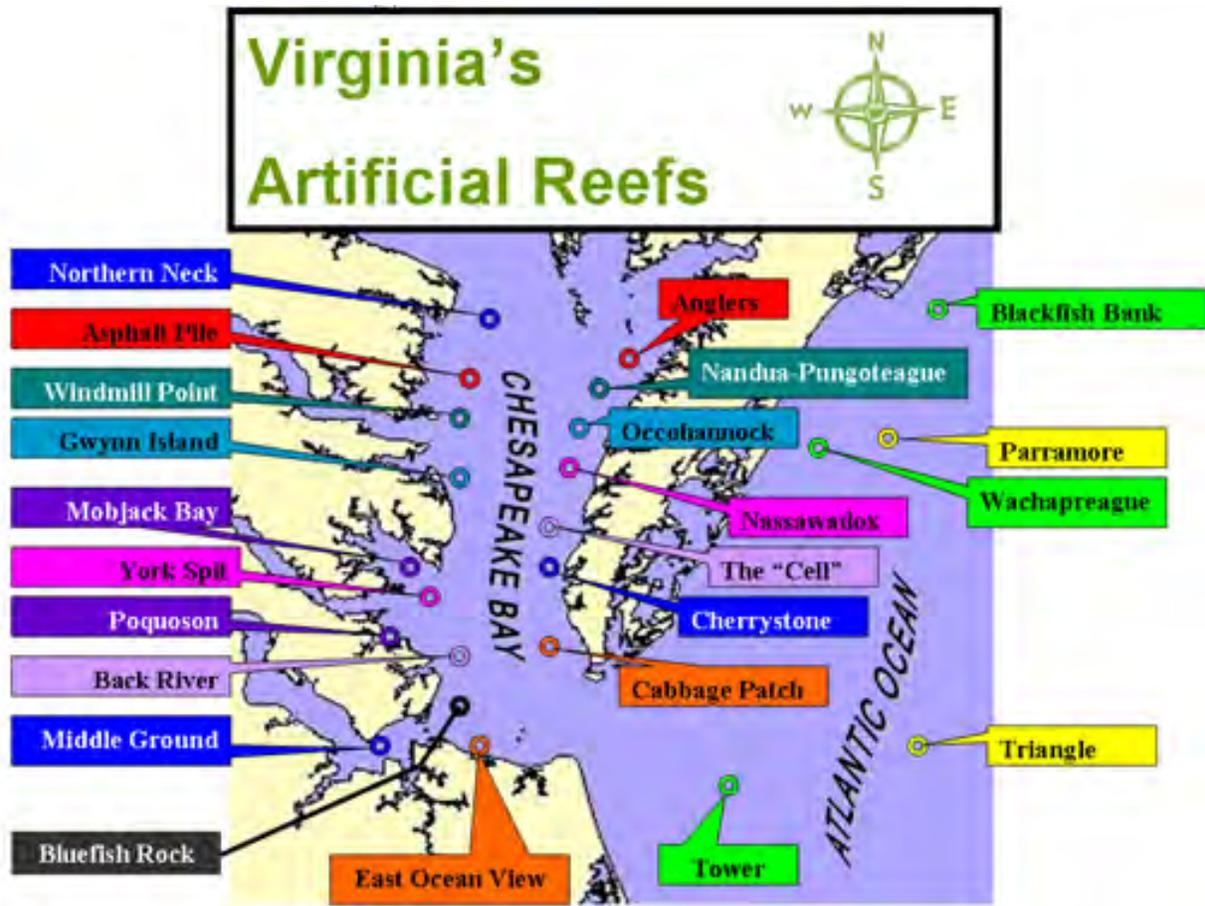
During the 1990s when reef development was just getting underway, the USACE was in the planning stages of deepening the Delaware Main Navigational Channel from 40 to 45 feet in depth to accommodate the upstream passage of more modern, deeper draft commercial vessels and to keep Delaware River ports (Wilmington, Delaware; Philadelphia, Pennsylvania and Trenton, New Jersey) competitive with other East Coast ports. Delaware Bay and the lower reaches of the river are all fine sediments, but as you approach upstream ports, two types of rock are encountered: bedrock which is blasted to the 45 foot depth profile, and large glacial boulders buried in sand. This rock is separated from fine sediment and small rocks and loaded by clamshell dredge into a hopper barge. A tug transports the barge to the permitted site where the rock is discharged at identified target locations.

Rock placement continued until the required clearance above structure, generally 15 feet at bay sites, was approached. From December 2017 until March 2019, more than two million tons of rock were placed on these three sites. In that short time span, over 90% of the materials on the Delaware reef sites had become natural rock. Delaware may receive additional rock in the future from maintenance dredging of the spur channels. Based on the volume of the material, the fact that it was delivered at no cost to the reef program, and that it has promise to enhance black sea bass juvenile habitat, this project ranks very high as one of Delaware's best.

VIRGINIA

Artificial Reef Program Overview

Artificial Reef Details	
Number of Permitted Sites	5 in federal waters 18 in inshore state waters
Number of Mitigation Reefs	0
Program Details	
Artificial Reef Management Authority	Virginia Marine Resources Commission (VMRC) under permits from the USACE
Average Annual Operating Budget	\$69,520
State Artificial Reef Plan	
Reef Coordinator	Alicia Nelson; Alicia.Nelson@mrc.virginia.gov
Shellfish Reef Program Contact (separate from the ARP)	Andrew Button; Andrew.Button@mrc.virginia.gov
Artificial Reef Website	https://webapps.mrc.virginia.gov/public/maps/artificial_reefs_list.php
Map of Deployments	https://webapps.mrc.virginia.gov/public/maps/artificial_reefs.php



ARs in Virginia.

State of the Virginia Artificial Reef Program

Virginia became formally involved in AR development in 1972 with the acquisition of six surplus World War II Liberty Ships, under Public Law 92-402. Virginia was awarded six ships, and VMRC was deemed as the state's authorized recipient for these vessels, which were sunk at two offshore reef sites (Parramore Reef and Triangle Reef). In the 1980s Virginia began acquiring its own reef permits. Initially, permits in Virginia were held by private organizations, but were eventually turned over to VMRC over concerns with liability and financial responsibility for wash ups. Additional reefs were developed through a siting plan written as part of a three-year AR study, conducted for VMRC, by Old Dominion University (ODU). This siting plan was largely responsible for the present system of bay AR sites.

VMRC now holds USACE construction permits for 18 bay and five ocean reefs. Three of these reefs: Back River, Gwynn Island, and Wachapreague were initially permitted to ODU for use as test sites. They were turned over to VMRC after the conclusion of the study. Additional sites were chosen with considerations based on the recommendations of the three year study and after reviewing such factors as water depth, existing users, bottom type, and distance to ramps and other facilities. Input was gathered from the sport fishing community, both by ODU and by the ARP, before making final site selection decisions. The

most recent reef site was permitted in 2006. No new locations are planned at this time. Instead, the ARP has focused on providing updated material to the existing 23 locations within the ARP.

The current ARP is constrained by loss of the majority of the annual funding and all dedicated AR personnel over the last 10 years. The ARP exists almost entirely on donations of material from local construction programs, and is exploring partnerships with local fishing clubs and organizations for targeted deployments near popular fishing areas.

When material is offered for donation, VMRC staff inspect the material prior to deployment for compliance with USACE and EPA regulations. The most common reason for rejection is crumbling pieces or exposed rebar which can be trimmed. VMRC staff is present for deployments and verifies the location and clearances of the materials deployed. Occasionally, the program receives donations by the U.S. Navy and local USCG of armored cable or concrete block.

Despite the reduced capabilities of the program in recent years, VMRC has focused on providing the deployment information in a more efficient way to the angling public. Beginning in 2017, new material locations were mapped using an online interactive mapping system and mobile application. These new interactive maps allow users to pinpoint GPS locations, zoom in and out of map features, and get metadata (such as date placed and amount of material) for each new deployment. Where available, previous deployment sites were incorporated into the new system.

Program Highlights

In 2016 and 2017, the Virginia ARP was very active due to multiple large deployments of bridge material from the replacement of the Lesner Bridge in Virginia Beach.

Permits for the bridge replacement required donation of usable materials to the ARP. Including this requirement early in the process simplified the donation. ARP staff met with representatives from McLean Contracting Company prior to demolition to clarify the donation process, choose sites (and backup sites) within the permitted locations, and to agree on protocol for material inspection and deployment.

As the demolition progressed, VMRC staff had to be available to inspect material and monitor deployments in a timely manner so that construction would not be delayed. The material consisted of concrete girders, pieces of deck, pile caps, columns, and footings. Pre-deployment inspections were performed on every loaded barge of material. The most frequent issue found was protruding rebar, which was trimmed from the material prior to deployment. Planning around weather conditions was difficult, as the VMRC observation vessel is smaller and less able to handle the conditions than most of the construction vessels.

Two preferred sites were chosen for the materials, one on each side of the Chesapeake Bay. This was done to provide options for the deployment teams based on wind and wave conditions on the scheduled days of activity. Most of the material (almost 10,000 tons of concrete) was placed at the Cabbage Patch Reef, while several deployments were placed at Blue Rock Reef when weather conditions were more favorable there. In total, over 13,000 tons of material from the Lesner Bridge replacement were deployed to ARs in the Chesapeake Bay.

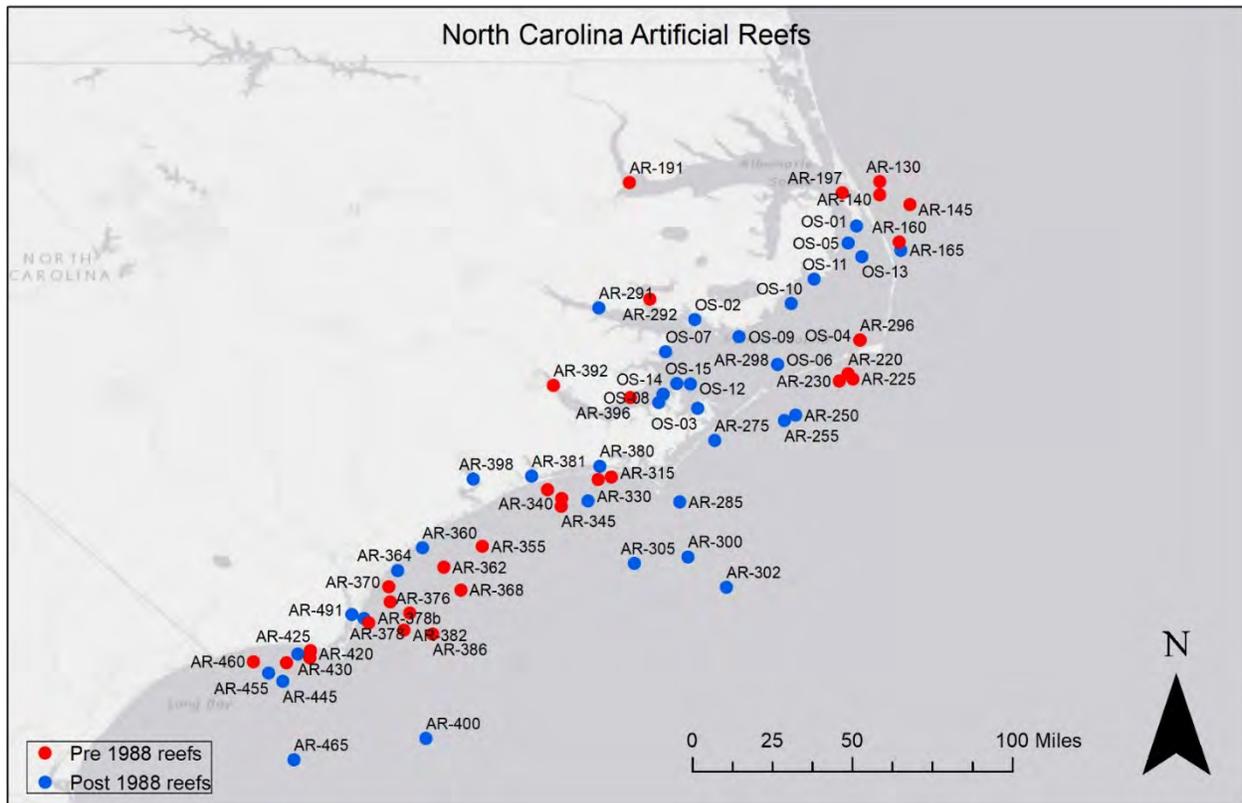
While this type of deployment is entirely dependent on local construction projects, it is the most frequent type of the deployment for the Virginia ARP. There are several upcoming construction projects in the area that include plans to donate any usable material to the ARP. Despite the sporadic availability of large-scale construction projects, the number of bridge and other large construction projects in the areas surrounding the Chesapeake Bay provide a large resource in potential material for the ARP.

(pictures and maps are provided in a second document).

NORTH CAROLINA

Artificial Reef Program Overview

Artificial Reef Details	
Number of Permitted Sites	30 in federal waters 13 in offshore state waters 25 in inshore state waters
Number of Mitigation Reefs	0
Program Details	
Artificial Reef Management Authority	North Carolina Division of Marine Fisheries (NCDMF)
Average Annual Operating Budget	\$1,869,000
State Artificial Reef Plan	http://portal.ncdenr.org/c/document_library/get_file?uuid=d7ddb18-f546-48c8-98d1-4cc43016ed2a&groupId=38337
Reef Coordinator	Jordan Byrum; Jordan.Byrum@ncdenr.gov
Shellfish Reef Program Contact (separate from the ARP)	Jason Peters; Jason.Peters@ncdenr.gov
Artificial Reef Website	http://portal.ncdenr.org/web/mf/artificial-reefs-program
State Reef Publications	http://portal.ncdenr.org/c/document_library/get_file?uuid=24160156-4b96-49e6-9126-4fa488b49cbb&groupId=38337
Map of Deployments	https://ncdenr.maps.arcgis.com/apps/webappviewer/index.html?id=3b27e8594cb6444c88b5525bf763aa55



ARs in North Carolina. Red circles indicate reefs placed before 1988, and blue circles indicate reefs placed after 1988.

State of the North Carolina Artificial Reef Program

Since 1988 the North Carolina ARP has permitted and constructed 17 offshore reefs and 20 inshore ARs. These reefs have been distributed throughout the four major bays on the North Carolina coast and in each major sound. Various donated and pre-fabricated materials have been deployed on offshore and inshore reefs in efforts to create cost-effective habitat, such as recycled concrete, boat molds, and aircraft. Deployment locations and material types have historically been led by partnering groups with less focus on biological impact or material suitability. Monitoring of these materials for stability and longevity has limited the accepted material types to concrete structures and steel vessels, as all other types are susceptible to movement and quick deterioration.

In recent years, changes to legislation surrounding fishing license revenues have resulted in a large budget for materials and deployment for the ARP. This has enabled the ARP to regularly construct large projects offshore and continue to annually build small inshore reefs. In fall 2019, NOAA Fisheries issued a long-awaited programmatic Section 7 consultation, which evaluated the ARP’s impact to protected species. This increase in funding and streamlined permitting process have expedited reef building in North Carolina. Planning of ARs is now aimed at maximizing the habitat value through material comparison with nearby natural reefs, planned longevity, and strategic methods of creating complex vertical structure.

The ARP has conducted several projects on ocean reefs recently. Annual deployments of Eternal Reef Balls occur at AR-360, just offshore of Topsail Island. This is the result of a partnership between NCDMF and Eternal Reefs. The ARP also sank a 100 foot class tugboat, *Fort Fisher*, at AR-320 in September 2018. Almost 700 Reef Balls have been poured to be deployed at AR-250 and AR-255 off Ocracoke and AR-368 off Wilmington alongside a 180-200 foot class vessel. The construction of these sites was planned for early 2020 and is the second year of a four-year budget designated for reef material purchase, transportation, and deployment grant. Purchasing for a reef construction project is also in process at AR-165 off the Outer Banks using state funding secured by the Outer Banks Anglers Club. During late spring 2019, demolition of the Herbert C. Bonner Bridge over Oregon Inlet began. This bridge connected the islands of the Outer Banks and has recently been replaced with a new bridge. The old bridge is being disassembled and deployed at four nearby offshore reef sites: AR-130, AR-140, AR-145, and AR-160, totaling around 80,000 tons of concrete bridge material. As of November 2019 the project was around 50% complete.

In 2018, the ARP constructed two new inshore reefs, AR-380 and AR-381 in Bogue Sound. Both reefs are accessible by small boats or kayaks. AR-380 was constructed using 96 bay balls, and AR-381 used 50 NCDMF designed reef units. Each of these reefs were constructed with a division-owned vessel. Planning and purchasing for reef construction is underway for AR-197, located north of Roanoke Island, and will also be constructed using division-owned vessels.

The ARP continues to utilize a dedicated mapping vessel to survey all new reef enhancements and prospective sites. ARs are also monitored via SCUBA for material condition and by water quality sondes for seasonal changes in water quality. In early 2018, a new buoy system was implemented on all estuarine reef sites. These new buoys are small and can be serviced by outboard-powered vessels rather than a large self-propelled barge.

Program Highlights

In early 2016, construction of a new bridge over Oregon Inlet on North Carolina's Outer Banks began. This project was the culmination of efforts between numerous contractors, state and federal agencies, local groups, and municipalities. After completion of the new bridge, the old bridge was scheduled for demolition. This was anticipated to produce approximately 80,000 tons of concrete that would cost millions to crush and transport to landfills for disposal. Because of a well-maintained relationship with the North Carolina Department of Transportation (NCDOT), the NCDMF ARP was included in these discussions. Through coordination between NCDOT, their contractor, and NCDMF, a plan was developed to dispose of the bridge material on four ARs located offshore of Oregon Inlet.

As the permit holders, a major concern for the ARP included routine issues of accuracy of deployment within AR boundaries and avoidance of pre-existing reef material. The bridge material is loaded onto 250-foot barges with around 1,500 tons of material per barge. These are towed offshore by a tugboat. The material is seated on a set of rails fitted with hydraulic cylinders used to push the bridge pieces off. Maneuverability and fine-scale positioning of a barge under tow are somewhat limited, particularly in

the ocean. In order to provide the highest likelihood of successfully placing materials in the desired area, deployment areas were designated as roughly 40 acres.

In order to ensure materials are deployed in the correct location and meet vertical clearance requirements, NCDMF staff are typically on-site for all deployments. Due to moving shoals and no regular maintenance dredging, Oregon Inlet is particularly dangerous and unpredictable. Decisions regarding reef deployments often are made with little advance notice. Deployment of bridge material is restricted by the tugboat's ability to navigate the inlet with the barge. The lack of regular schedule, long travel distance from NCDMF office, and concerns about marginal weather in smaller NCDMF vessels made on-site monitoring challenging. To alleviate concerns about monitoring deployments, NCDMF is instead using Automatic Identification System (AIS) tracking software to monitor the tugboat and barge. The software allows for real-time monitoring of the deployment vessel's location with accuracy within the minute, as well as visualization of the deployment boxes within each reef.

As of November 2019, bridge deployments were just over 50% completed, all occurring well within the permitted boundaries and with very little outside of the designated deployment areas. Sidescan and bathymetric surveys were conducted after about 35% of deployments were completed. These confirmed the AIS tracking records of the deployments remaining in or very near deployment boxes, and all material remaining within each reef boundary. Continual sidescan and bathymetric surveys will be conducted at completion intervals. The project is estimated to be completed by spring or summer 2020.

Figure ##: Blueprint from PCL Construction showing the deployment barge loaded with bridge material.

Figure ##: Deployment Plan for AR-140.

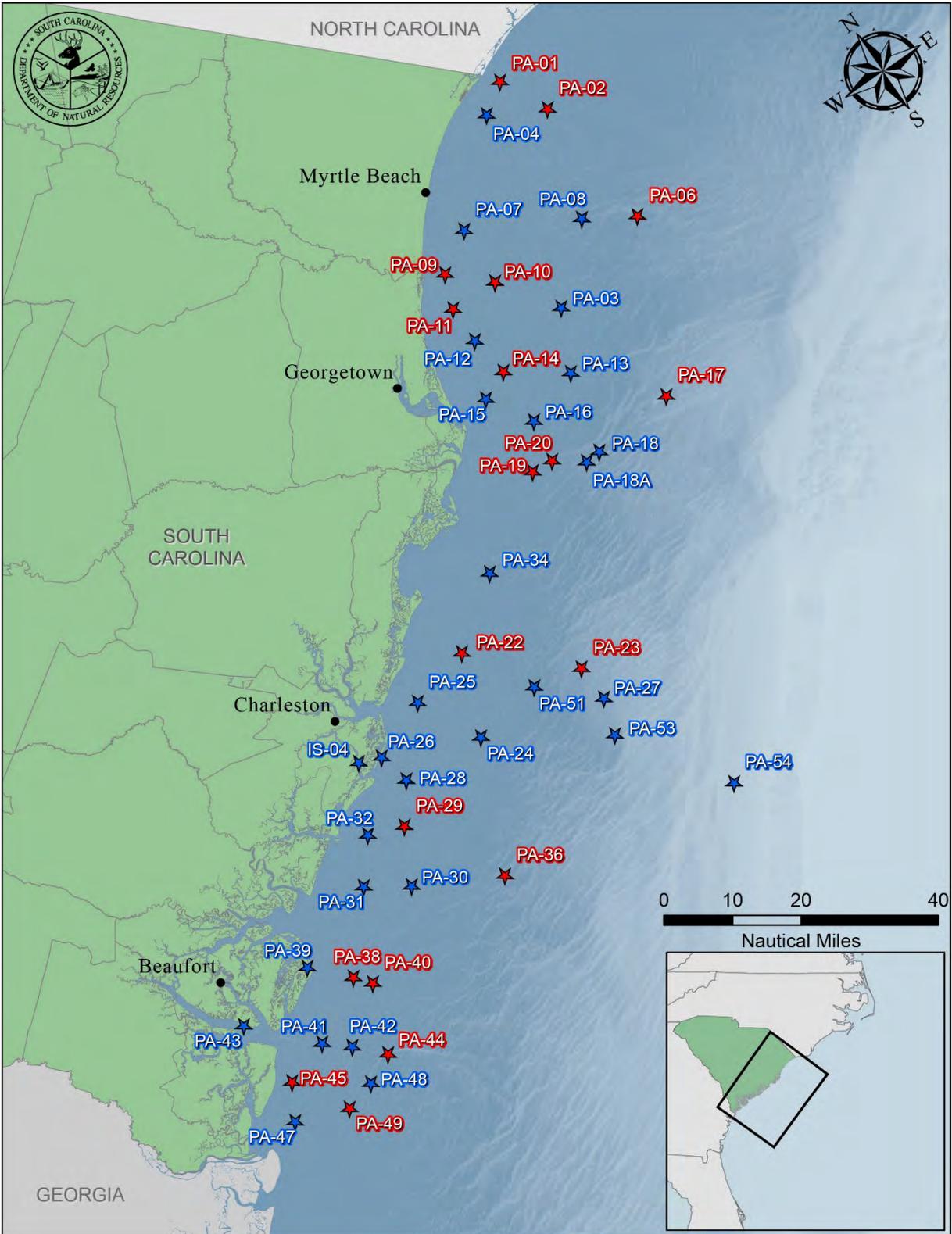
Figure ##: AIS Tracking of Deployment Barge on AR-160.

Figure ##: Sidescan imagery of AR-140 bridge deployments.

SOUTH CAROLINA

Artificial Reef Program Overview

Artificial Reef Details	
Number of Permitted Sites	35 in federal waters 9 in offshore state waters 3 in inshore state waters
Number of Mitigation Reefs	0
Program Details	
Artificial Reef Management Authority	South Carolina Department of Natural Resources (SCDNR)
Average Annual Operating Budget	\$500,000
Reef Coordinator	Robert Martore; MartoreB@dnr.sc.gov
Shellfish Reef Program Contact (separate from the ARP)	Ben Dyar; DyarB@dnr.sc.gov
Artificial Reef Website	http://saltwaterfishing.sc.gov/artificialreef.html
List of Deployments	http://www.dnr.sc.gov/artificialreefs/docs/ReefGuide2015.pdf



ARs in South Carolina. Red indicates reefs placed before 1988, and blue indicates reefs placed after 1988.

State of the South Carolina Artificial Reef Program

The South Carolina Marine Artificial Reef Program (SCMARP) was created in 1973 to enhance recreational fishing and diving opportunities in the state's coastal waters and to enhance marine and estuarine fishery stocks by increasing the amount of productive hard bottom habitat on the ocean bottom. Initially, SCMARP was minimally staffed with state-supported personnel, but had no dedicated funds to support reef construction activities. ARs were constructed solely through donated materials and services or through funds specifically appropriated for individual projects. Reef construction activities were, as a consequence, sporadic, with little long-term planning or coordination. Prior to 1988 there were 23 AR sites in South Carolina estuarine and offshore waters constructed primarily of surplus materials.

In 1991, the state enacted the Recreational Fisheries Stamp Program (now the Saltwater Recreational Fisheries License Program) whereby anglers were required to purchase a license to fish in saltwater off the coast of South Carolina. A portion of the funds raised was dedicated to finance the SCMARP. With the addition of dedicated funding AR construction expanded considerably across the state. To better manage this anticipated growth, the SCDNR drafted the South Carolina Marine Artificial Reef Management Plan (1991). The plan outlines appropriate materials for use in reef construction, cleaning protocols for surplus materials, and provides long-term planning goals for equitable distribution of reef sites and materials across all coastal counties. SCMARP currently maintains 47 AR construction sites along approximately 160 miles of coastline. These sites range in location from estuarine creeks to as far as 50 miles offshore. Each manmade reef site consists of a permitted area ranging from several thousand square yards to as much as 24 square miles. A total of approximately 40 square miles of coastal and open ocean bottom has been permitted. The increase in number of permitted reef sites is not the only measure of growth for the program. Since introduction of the Recreational Fisheries Stamp Program the average number of yearly deployments on these sites has risen from less than six per year to 16.

Since adoption of the Artificial Reef Management Plan, materials used in reef construction on South Carolina reefs have been much more highly regulated. Donated surplus items such as car and truck tires and automobile bodies were commonly used on the state's first ARs. Decades of observations of these materials has shown their limited value as long lasting reef structure, therefore, these items are no longer allowed for use in the SCMARP. Concrete structures, both surplus and designed, are currently the most commonly used materials in reef building. Surplus materials like culvert pipe or concrete junction boxes are usually donated to the SCMARP. Construction of designed structures are either contracted out or built in-house. SCMARP has designed, built, and tested over a dozen different designs of concrete reef habitat modules. Tens of thousands of these units have been placed on all reef sites across the state. Steel-hulled vessels are the next most commonly utilized material on South Carolina ARs. Hundreds of vessels ranging in length from 40-460 feet have been deployed on all reef sites across the state including barges, tugboats, freighters, trawlers, landing craft, as well as army and naval ships.

Program Highlights

Figure ##. The design of concrete cones made by SCDNR allows stacking on a barge so that hundreds of units can be deployed at one time.

In addition to reef construction, SCMARP is responsible for monitoring and research activities on all South Carolina reef sites. SCMARP utilizes sidescan and hull mounted sonar, aerial surveys, and SCUBA to monitor colonization of reef materials, development of fish assemblages, and structural stability of reef materials. Past research projects have included examining heavy metals and PCBs in organisms found on ARs, feeding habits and trophic relationships of fishes on ARs, succession and biodiversity, and development of invertebrate assemblages. SCMARP is currently looking at the effect of invasive lionfish on ARs. To help better determine utilization patterns on ARs, acoustic receivers have been placed on numerous reef sites along South Carolina's coast to detect the presence of fish implanted with radio tags. They continue to show the seasonal presence of highly migratory species from as far away as Massachusetts and Florida, as well as local migrants (inshore to offshore) like sturgeon.

Many reef construction projects off South Carolina are conducted with assistance from outside organizations. From 1997-2014, SCMARP carried out joint reef building projects with the South Carolina Army National Guard. The Guard provided materials and assisted with de-militarization and cleaning of those materials while the state permitted all reef sites, provided permanent marker buoys on the sites, and conducts all follow up monitoring and underwater surveys. To date over 500 armored military vehicles, 250 steel shipping containers, and approximately 35,000 tons of concrete have been deployed through this cooperative program, creating over 1,120,000 cubic feet of new reef habitat. Nearly every AR site off South Carolina has received material from this project.

Figure ##. Armored personnel carriers are deployed on a South Carolina AR site.

Over the past decade, SCMARP has deployed numerous steel-hulled vessels with the assistance of the Coastal Conservation Association (CCA) of South Carolina. A typical project would involve reef program personnel identifying an appropriate vessel, coordinating either vessel purchase or donation, and arranging a contractor for cleaning, preparation, and towing of the vessel. Total costs would then be split between the SCMARP and CCA. Vessels procured through this partnership include barges, shrimp trawlers, landing craft, and tugboats. The long-term goal of this joint venture is to place smaller vessels on near-shore reefs and larger vessels on deeper reefs off each of South Carolina's coastal counties and, eventually, place CCA-sponsored material on every reef site off the state.

Figure ##. Two CCA sponsored 106-foot long tugboats sunk on 100-foot deep South Carolina ARs. The *General Oglethorpe* (top) and the *Grace McAllister* (bottom).

To better manage the use of permitted manmade reefs in offshore waters and to ensure their long-term viability the SCDNR has, through the South Atlantic Fishery Management Council (SAFMC), obtained special management zone (SMZ) status for 29 of the 35 permitted reef sites located in federal waters (the remaining, newer sites are now also under consideration by the Council for SMZ status). Fishing on those reef sites granted SMZ status is restricted to hand-held hook and line gear and spearfishing (without powerheads) and take is limited to the current recreational bag limits. In 2014 the program began construction of a first-of-its-kind deep-water (>300 feet) AR marine protected area (MPA) with the goal of creating spawning habitat for deep-water snapper and grouper species and protecting spawning stocks. To create structures of sufficient size to be effective as reef material in 300 feet of water items such as steel I-beams, cell phone towers, 40-foot long container boxes, and a surplus derrick crane were welded to the decks of two 260-foot barges to create vertical structures nearly 100 feet in height. Subsequently, a 170-foot long steel bridge truss, also welded to the deck of a barge, was added to the site named the Charleston Deep Reef, creating the first AR MPA in the nation. Since creation of

this protected reef site two of SCDNR’s experimental ARs, originally permitted to examine the feasibility and possible benefits of establishing no-take manmade reefs solely for the purpose of stock and habitat enhancement, have been granted Spawning SMZ status by the SAFMC. Like the Type II MPAs in deeper water, fishing for or possessing species from the Snapper-Grouper Management Unit is prohibited within these areas. South Carolina now has three ARs deployed and maintained exclusively for the protection and enhancement of its reef fish fisheries resources.

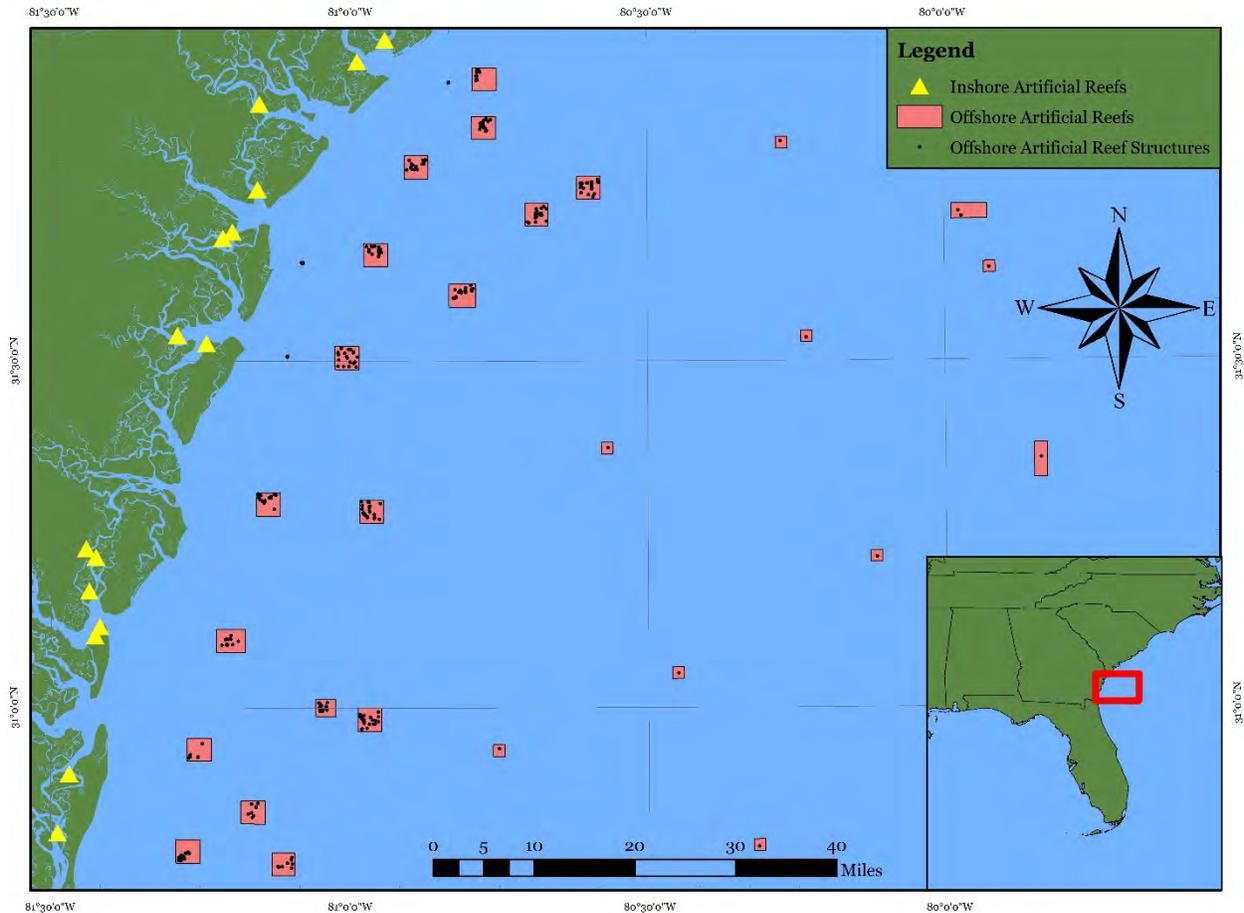
Figure ##. Barges with added profile and a steel bridge truss welded to a deck barge were used to create the Charleston Deep Reef Marine Protected Area. Photo credits: Robert Martore, SCDNR.

Figure ##. Warsaw grouper on the Charleston Deep Reef MPA. Photo credit: NOAA ROV footage, 2016.

GEORGIA

Artificial Reef Program Overview

Artificial Reef Details	
Number of Permitted Sites	28 in federal waters 3 in offshore state waters 15 in inshore state waters
Program Details	
Artificial Reef Management Authority	Georgia Department of Natural Resources (GADNR), Coastal Resources Division under permits from the USACE and Georgia Coastal Marshlands Protection Act
Reef Coordinator	Paul Medders; Paul.Medders@dnr.ga.gov
Artificial Reef Website	https://coastalgadnr.org/HERU
Map of Deployments	https://coastalgadnr.org/sites/default/files/crd/Reefs/Reef%20Booklet%202016%20Update%20%28Edited%205-24-17%29.pdf https://coastalgadnr.org/sites/default/files/crd/Reefs/InshoreReefWeb.pdf
State Reef Publications	https://coastalgadnr.org/HERU/downloads



State of the Georgia Artificial Reef Program

The Offshore Artificial Reef (OAR) Project in Georgia began in 1970 under the authority of the Georgia State Game and Fish Commission and is currently administered by GADNR's Coastal Resources Division (CRD). In the mid-1980s as inshore saltwater fishing's popularity grew in Georgia, so did anglers' desire for additional fishing sites. The CRD responded with Sport Fish Restoration, state, and private funds, to establish an Inshore Artificial Reef Enhancement Project.

The GADNR OAR Project is currently funded through federal dollars from the U.S. Fish and Wildlife Service's Federal Aid in Sport Fish Restoration Program. Historically, state funding was limited during the 1980s, although some budget increases were afforded sporadically during the 1990s and beyond through occasional legislative appropriations. Following the licensing of recreational fishermen in Georgia's marine waters in 1998, funding for the OAR Project increased and stabilized. In recent years additional funding has been generated for marine habitat enhancement through the sale of specialty license plates. The first projects funded through this revenue source are in progress.

Items used for AR enhancement in Georgia are typically materials of opportunity. For example, in 2015, the CRD deployed approximately 400 concrete transmission line poles and bases donated from the Georgia Power Corporation, the Georgia Transmission Corporation at AR F.

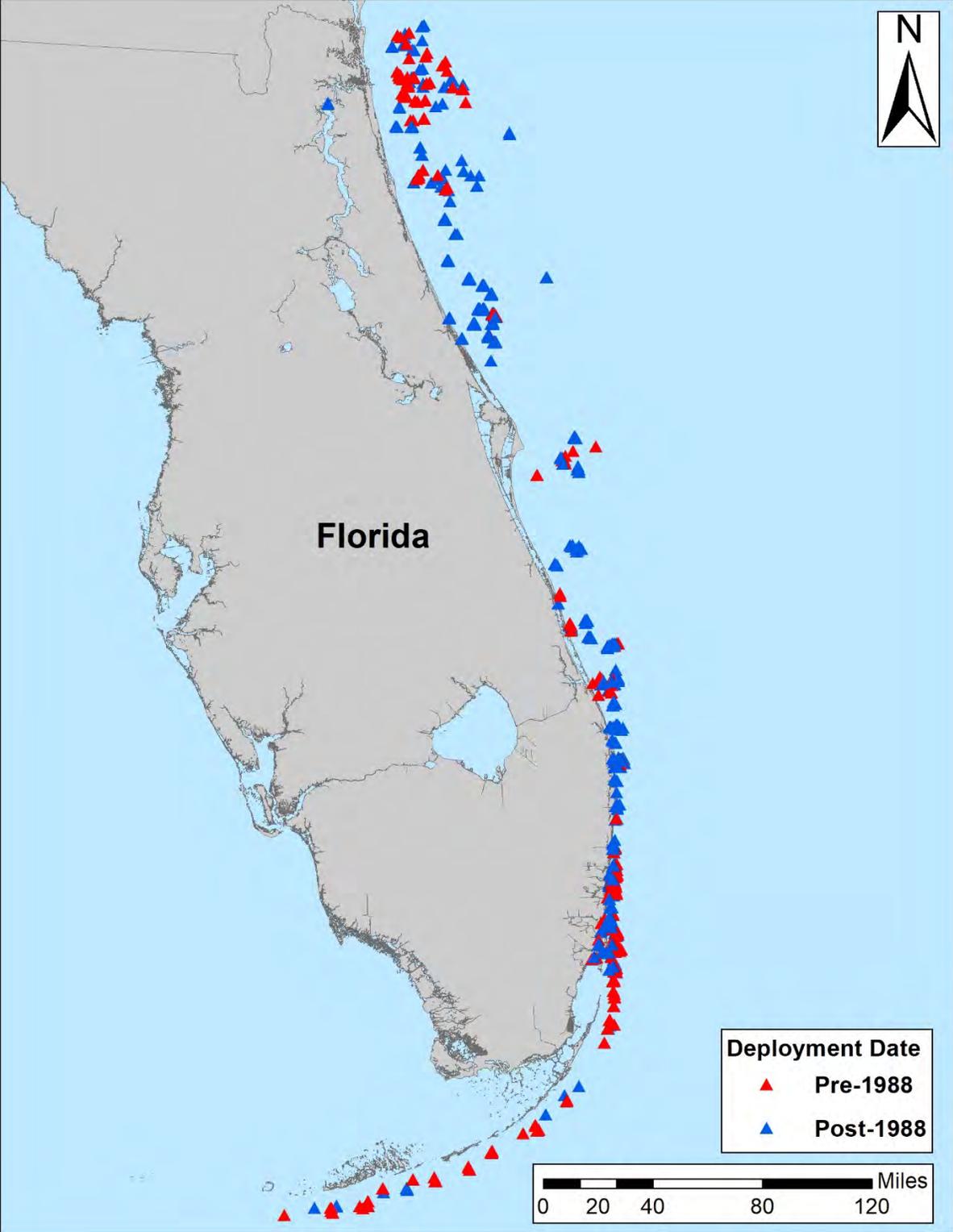
In 2018, the CRD deployed ~3,000 tons of concrete and metal materials, as an enhancement to AR DRH. The size of this deployment was only possible through the support of a numerous partners. This included funding from Federal Aid in Sport Fish Restoration, the Sapelo Saltwater Fishing Club, CCA of Georgia, and the Building Conservation Trust – CCA’s National Habitat Program – as well as the donation of materials from the City of Brunswick, Georgia and Claxton Poultry Company.

Partnerships also provide opportunities to acquire materials that are not normally available such as subway cars. Through a multi-year partnership with NYTA the CRD has deployed total of 182 subway cars, the most recent of which was a deployment of 44 cars at reef JY in 2009.

FLORIDA

Artificial Reef Program Overview

Artificial Reef Details	
Number of Permitted Sites	48 in federal waters 38 in offshore state waters 10 in inshore state waters
Number of Mitigation Reefs	Not tracked by the Florida Fish and Wildlife Conservation Commission (FWC) ARP
Program Details	
Artificial Reef Management Authority	The FWC ARP provides financial and technical assistance to local coastal governments, nonprofit organizations, and universities to develop and monitor ARs. ARs must be deployed in designated permitted areas that are regulated by the USACE and must also meet additional Department of Environmental Protection (DEP) permit requirements in state waters.
Average Annual Operating Budget	\$600,000
Reef Coordinator	Keith Mille; Keith.Mille@myfwc.com
Shellfish Reef Program Contact (separate from the ARP)	Katie Konchar; Katie.Konchar@myfwc.com
Artificial Reef Website	https://myfwc.com/fishing/saltwater/artificial-reefs/
Map of Deployments	http://myfwc.maps.arcgis.com/apps/View/index.html?appid=4675e1db32ac43a9a4308e757965d17d%20%20
State Artificial Reef Plan	https://myfwc.com/media/4889/flarstrategicplan2.pdf



ARs on the east coast of Florida. Red triangles indicate reefs placed before 1988, and blue triangles indicate reefs placed after 1988.

State of the Florida Artificial Reef Program

The FWC Division of Marine Fisheries Management administers a state ARP that was legislatively created in 1982. In November 2003, the FWC adopted a state Artificial Reef Strategic Plan developed by an advisory board of interested stakeholders. The plan listed several goals of the ARP to ensure that ARs are utilized to benefit Florida's economy and fisheries, while also being incorporated into research projects to obtain a better understanding of how ARs impact the ecological function of an area. Over the last 37 years, Florida has distributed more than \$26 million in state and federal funds to local coastal governments, non-profit organizations and state universities for AR-related activities. Florida tracks ongoing AR deployments using patch reef designations, which is defined as any material within 150 feet of each other. Of the greater than 3,600 artificial patch reefs that have been constructed and deployed offshore of Florida: 38% are secondary-use concrete materials, 33% are prefabricated concrete modules, 15% are vessels/barges, 8% are metal, 4% are boulders, and 2% are other materials. Each year, approximately 140 patch reefs are added in Florida waters.

The ARP allocates federal funds from the U.S. Fish and Wildlife Service Federal Aid in Sport Fish Restoration Program through an annual grant cycle, which is awarded to applicants based on a suite of criteria. The funds available for this program have been steadily funded for the past decade, providing funding for typically seven to eight construction projects and two to three monitoring projects annually. Competition for grant funds is high due to rising AR deployment costs and the lack of available material, so the total funding requested through the grant program is typically double the available funds. In addition to managing annual grant awards, the FWC ARP also conducts fish censuses, sidescan sonar mapping, material evaluation, and other monitoring activities. These activities are conducted in-house by small team within the ARP, which consists of an environmental administrator, two permanent fishery biologists and one temporary fishery biologist. The information gained from these monitoring activities is used to evaluate the change in fish community spatially and temporally, impacts from environmental perturbations (e.g. hurricanes, red tide, etc.), and durability of various AR material. One of the current monitoring projects being conducted by FWC staff is using underwater hydrophones to record boat noise in proximity to ARs to quantify and compare boater visitation rates at different reef sites. FWC also recently funded another project that will evaluate the difference in permit (*Trachinotus falcatus*) spawning aggregation behavior and fishing mortality at natural and AR sites in the Florida Keys. These monitoring projects are examples of how the FWC ARP selects specific projects for funding to help achieve AR and fisheries management objectives.

In addition to grant management and monitoring, another important role of the FWC ARP is to provide opportunities for stakeholders to discuss issues related to AR management. The FWC ARP and Florida Sea Grant organize regional AR workshops every two years, and a statewide AR summit every five years. These venues provide an opportunity for a diverse group of stakeholders (e.g. county managers, fishers, non-profit organizations, researchers, etc.) to disseminate information regarding AR best practices, new research findings, and future challenges for AR development in Florida.

Program Highlights

With over 3,600 AR patch reefs state-wide, Florida has a diverse assemblage of AR habitats between the Atlantic Ocean, Gulf of Mexico, and estuarine regions throughout the state. Recent trends include an

increase in the use of concrete module ARs, including more requests for artform ARs (e.g. statues), and an increase in efforts for more purpose-built ARs to provide habitat to satisfy fisheries management objectives. Large steel vessels continue to be popular and deployed statewide despite rising costs to prepare and deploy. Large bridge demolition projects continue to comprise the greatest tonnage of AR deployments overall, while use of secondary-use concrete such as concrete culverts and manholes are in decline due to lower availability from an increase in concrete recycling. The use of ARs as mitigation to offset impacts from beach nourishment or ship groundings continues, with advancements in material design such as the ability to be used as nurse areas for reef-building corals. The following paragraphs spotlight three recent projects off southeast Florida.

Palm Beach Reef Darts

During 2017, Palm Beach County worked with one of the oldest recreational fishing clubs in Florida (Palm Beach Fishing Club) to design a “reef dart” module that uses concrete power poles to create an array of high relief features to attract grouper and pelagic fish species. Ultimately, the Palm Beach Fishing Club want to focus on building deepwater reef habitat to attract snapper and grouper species at depths greater than 400 feet. There have been three deployments of this module type as of 2019, so the long-term success of this module type is still unknown.

The first version of the reef darts was deployed offshore Palm Beach in a depth of 105 feet. Post-deployment dives observed that several of the poles had snapped during deployment upon impact to the seafloor, and the reef darts were placed too far apart (>100 feet). The reef dart design was upgraded with a reinforced power pole base to prevent it from breaking on impact, and a larger (40 feet) power pole made from pre-stressed concrete. Each module measures 45 feet tall, weighs 8 to 10 tons, and costs ~\$3,500 to create. The improved reef darts were deployed in the same location as the first deployment but were placed closer together in order to create more complex habitat. The strong current made the deployment challenging and some of the reef darts were damaged when they landed on top of one another during deployment. The majority of the reef darts were undamaged and provide the relief and complexity that the fishing club was hoping for.

The most recent deployment of reef darts occurred in 2019 offshore Palm Beach at a depth of 500 feet. The deeper reef darts were deployed to create habitat that was attractive to deep water grouper species. Researchers from the Florida Fish and Wildlife Research Institute are planning on placing acoustic receivers at both the shallow and deep reef dart site to track fish movements around each site. In addition, the West Palm Beach Fishing Club is planning to deploy deep water video gear to monitor changes in the fish community at the deep reef dart site.

The reef dart initiative is a great example of the collaboration between local fishermen, county managers, and state agency representatives to create ARs to achieve a specific goal defined by the local stakeholders. Additionally, the partners involved have plans to monitor the sites to evaluate project performance, user satisfaction, and to determine if their goal is being met.

Figure ##. Reef darts that were deployed offshore Palm Beach, where some of the structures were damaged during deployment. Each structure is around 30 feet tall and was designed by a local fishing club. Photo credit: FWC.

USS Vandenberg

The U.S. Navy and the U.S. DOT Maritime Administration (MARAD) will occasionally have large decommissioned military vessels available as a donation to the states for shallow water ARs (less than 500 foot depth) as an authorized disposal option. Availability of large military ships for donation is typically greatest when the value of scrap steel and other metals is low, resulting in high costs to otherwise scrap the decommissioned vessels. A 540 foot long former missile tracking ship, the *USS Vandenberg*, became available from MARAD for reefing in 2001 but the estimated cost of cleaning and deploying the vessel was \$5.69 million. The high cost was due to the size of the vessel, the deteriorating hull and cleaning of PCBs. MARAD committed to covering a portion of the cleanup costs, but funds had to be raised by Monroe County, the City of Key West, the state of Florida (FWC and the Florida Office of Tourism and Economic Development), and private donors before the title would be transferred.

By the time the *Vandenberg* entered dry dock in April 2007, PCB remediation costs were significantly higher than expected and the vessel was eventually seized by the U.S. Marshal due to back bills owed to the shipyard. FWC and Florida's Governor's Office approved another \$2.6 million to salvage the project and cover outstanding debts. The *Vandenberg* was towed to Key West in 2009 where a series of walkthrough inspections were conducted by FWC and the EPA to ensure cleanup was completed in accordance with all state and federal regulating requirements. In May 2009 the *Vandenberg* was successfully sunk within a designated permitted area six miles off Key West at a depth of 142 feet within the boundaries of the Florida Keys National Marine Sanctuary.

In September 2017, a major Category 4 storm (Hurricane Irma) impacted the Florida Keys. Post-hurricane dives on the *USS Vandenberg* indicated that the vessel was still upright but it had shifted towards deeper water and one of the radar dishes was ripped off. However, this vessel still remains an iconic dive spot for visitors and residents of the Florida Keys. Divers visiting the vessel can observe a wide range of reef fish species from smaller tropical fish (damselfish, *Chromis*, butterflyfish, etc.), resident Goliath grouper, and large pelagic species (amberjack, sharks, horseeye jacks, etc.). A socio-economic study also found that the *Vandenberg* contributed to significant increases in business for dive operators resulting in an increase in sales, income, and employment in the Florida Keys economy.

Figure ##. Bow of the *USS Vandenberg* offshore Key West after it was deployed in 2009. Photo credit: FWC.

Boca Step Reef

Palm Beach County has been constructing nearshore limestone boulder reefs since 2009 to create "stepping stone" reefs to promote offshore movement of recreationally and commercially important fish species from inshore nursery habitat. Southeast Florida has experienced a decline in nearshore hard bottom habitat due to beach nourishment, so the step reef concept is trying to regain some of this critical habitat. Four of the nearshore boulder reefs were monitored by a non-profit organization in 2018, and the limestone boulder sites had the highest average abundance of fish compared to other reef types and over 40 unique fish species between the reef sites. The fish species observed at these sites included schooling baitfish as well as juvenile/sub-adult grunts, wrasses, jacks, and snapper.

However, it has yet to be determined as to whether these nearshore reefs have increased the density of fish species at adjacent offshore reefs.

The FWC ARP funded Palm Beach County to deploy another nearshore limestone boulder reef in 2018. The limestone boulders were deployed in a depth of 35 feet to create a patch reef consisting of 15 foot tall limestone boulder piles that are approximately 100 feet apart. Each pile is comprised of approximately 250 tons of 3-4 foot diameter boulders at the cost of about \$60,000 per patch reef (\$240 per ton). They were placed in an area devoid of hard bottom so there would be no unintentional impacts to the existing natural reefs in the region. Monitoring of over two dozen ARs offshore Palm Beach County conducted by a non-profit organization in 2015 found that the three AR sites with the highest abundance of fish were all step reefs.

Figure ##. Florida Fish and Wildlife biologist inspecting the recently deployed Boca Step Reef boulders in Palm Beach. Photo credit: FWC.

Conclusion

ARPs on the Atlantic coast have seen many changes over the past three decades. These range from changes in material selection, usage of new technology, and increasing complexity in permitting reef projects. Despite some differences in program structures, funding, and objectives, many similarities exist across state lines.

Since 1988, program use of most reef materials have shifted towards those with superior performance value such as heavy concrete structures, aggregate rock, and steel vessels rather than tires, vehicles, and other assorted scrap metal which lack stability and durability. This transition was just beginning at the time the state profiles were originally published in 1988. With recently updated material guidance (Guidelines for Marine Artificial Reef Materials citation) there is reef building consistency among state programs on the Atlantic and Gulf coasts. Interestingly, in the 1988 report, several states described plans to build prefabricated concrete structures. These structures are ubiquitous among reef programs today.

Nearly every state has embraced new technologies like ROVs, underwater video cameras, sidescan sonar, multi-beam surveys, and GPS to designate new sites, map existing materials, and evaluate established reef habitats. These technologies provide considerably more information about reef sites than was previously known and provide more accurate methods (GPS) for users to locate deployed materials. Many state reef programs have developed reef guides and other related online and printed reef resources so anglers and divers can identify reef site locations and compositions.

Over the past three decades it's become commonplace to conduct bathymetric surveys and benthic characterizations before reef construction permits are authorized. Survey requirements are not the only changes to the permitting process. In many states, USACE now requires consultation with NOAA Fisheries Protected Resources Division to assess impacts of ARs to protected species and essential fish habitat. Additional consultations are also required with many state and federal agencies including but not limited to the USCG, EPA, U.S. Fish and Wildlife Service, and National Ocean Service. Mapping technology advancements have improved each reef program's ability to identify key areas for AR enhancement, avoid impacts to essential fish habitat, and adhere to changing state and federal requirements. However, this process has slowed reef construction in several states and is a topic of increased concern for ARPs. With the limited resources and budgets for many ARPs, meeting these requirements has significant costs and ultimately decreases the programs' ability to effectively enhance fish habitat through AR projects.

Though there are many differences in individual state reef program characteristics (e.g. size and funding), some overarching themes are consistent. Large reef projects are often made possible through donation of acceptable materials and services from local entities such as the state's DOT or private companies. Reefing of project material (i.e. concrete and steel bridge material) is most attractive to companies looking for a low-cost disposal method. Many projects are located on or near the water which facilitates the transport of the material to a reef site. State programs typically do not have funding to conduct projects of this scale on their own.

Research needs are broadly similar among states. Some reef programs are affiliated with local universities interested in evolving reef research issues. Emphasis is given to existing habitat enhancement, fisheries production, population dynamics, and reef usage by fishermen and divers.

ARPs continue to provide beneficial use of aquatically recycled materials of opportunity that create new research, fishing, and diving opportunities in the coastal U.S., as well as contribute to responsible fisheries management.

Appendix: Abbreviations and Acronyms

(in order of appearance)

ARP: artificial reef program

AR: artificial reef

MA DMF: Massachusetts Division of Marine Fisheries

USCG: United States Coast Guard

UVC: Underwater Visual Census

BRUVS: Baited Remote Underwater Video Stations

NEU: Northeastern University

EPA: Environmental Protection Agency

DOT: Department of Transportation

RI DMF: Rhode Island Division of Marine Fisheries

EFH: Essential Fish Habitat

SHU: Sacred Heart University

USACE: United States Army Corps of Engineers

CIRCA: Connecticut Institute for Resilience and Climate Adaptation

NYSDEC: New York State Department of Environmental Conservation

GEIS: Generic Environmental Impact Statement

SGEIS: Supplemental Generic Environmental Impact Statement

ROV: Remote Operated Vehicle

NOAA Fisheries: National Oceanic and Atmospheric Administration National Marine Fisheries Service

MORF: Moriches Offshore Reef Fund

Reef Initiative: Governor Andrew Cuomo's Artificial Reef Initiative

NYPA: New York Power Authority

NYTA: New York Transit Authority

NYDOT: New York Department of Transportation

NYCC: New York Canals Corporation

NYC: New York City

NAGD: National Grid

NJDFW: New Jersey Division of Fish and Wildlife

DE DFW: Delaware Division of Fish and Wildlife

RFP: request for proposals

PCB: polychlorinated biphenyl

VMRC: Virginia Marine Resources Commission
ODU: Old Dominion University
NCDMF: North Carolina Division of Marine Fisheries
NCDOT: North Carolina Department of Transportation
AIS: Automatic Identification System
SCDNR: South Carolina Department of Natural Resources
SCMARF: South Carolina Marine Artificial Reef Program
CCA: Coastal Conservation Association
SAFMC: South Atlantic Fishery Management Council
SMZ: Special Management Zone
MPA: Marine Protected Area
GADNR: Georgia Department of Natural Resources
OAR: Offshore Artificial Reef
CRD: Coastal Resources Division
FWC: Florida Fish and Wildlife Conservation Commission
DEP: Department of Environmental Protection
MARAD: Maritime Administration

Atlantic States Marine Fisheries Commission

American Lobster Management Board

February 2, 2021
8:30 a.m. – 12:15 p.m.
Webinar

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order (*D. McKiernan*) 8:30 a.m.
2. Board Consent 8:30 a.m.
 - Approval of Agenda
 - Approval of Proceedings from October 2020
3. Public Comment 8:35 a.m.
4. Review and Discuss Proposed Rule and Draft Environmental Impact Statement for Atlantic Large Whale Take Reduction Plan Proposed Modifications for 2021 (*C. Coogan*) 8:45 a.m.
5. Consider Management Response to the 2020 American Lobster Benchmark Stock Assessment and Peer Review (*D. McKiernan*) **Possible Action** 10:15 a.m.
 - Review Stock Status, Reference Points and Assessment Recommendations (*C. Starks*)
 - Discuss Development of Draft Addendum XXVII on Gulf of Maine Resiliency (*C. Starks*)
6. Discuss Potential for Conducting a Management Strategy Evaluation for the American Lobster Fishery (*B. Shank/J. Kipp*) 11:15 a.m.
7. Review and Populate Jonah Crab Advisory Panel Membership (*T. Berger*) **Action** 12:05 p.m.
8. Elect Vice-Chair (*D. McKiernan*) **Action** 12:10 p.m.
9. Other Business/Adjourn 12:15 p.m.

MEETING OVERVIEW

American Lobster Management Board

February 2, 2021

8:30 a.m. – 12:15 p.m.

Webinar

Chair: Daniel McKiernan (MA) Assumed Chairmanship: 02/20	Technical Committee Chair: Kathleen Reardon (ME)	Law Enforcement Committee Representative: Rob Beal
Vice Chair: VACANT	Advisory Panel Chair: Grant Moore (MA)	Previous Board Meeting: October 19, 2020
Voting Members: ME, NH, MA, RI, CT, NY, NJ, DE, MD, VA, NMFS, NEFMC (12 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from October 19, 2020

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Review and Discuss Proposed Rule and Draft Environmental Impact Statement for Atlantic Large Whale Take Reduction Plan Proposed Modifications for 2021 (8:45-10:15 a.m.)

Background

- NOAA Fisheries has published a proposed rule to amend the regulations implementing the Atlantic Large Whale Take Reduction Plan to reduce the incidental mortality and serious injury to North Atlantic right whales, fin whales, and humpback whales in northeast commercial lobster and Jonah crab trap/pot fisheries to meet the goals of the Marine Mammal Protection Act and the Endangered Species Act (**Briefing Materials**). A summary overview of the proposed rule is also available (**Briefing Materials**).
- The proposed modifications are intended to achieve at least a 60 percent reduction in mortalities or serious injuries of right whales in the Northeast crab and lobster trap/pot fisheries. The Proposed Rule would:
 - Modify gear marking to introduce state-specific marking colors
 - Increase the number of and area of marked lines
 - Modify gear configurations to reduce the number of vertical buoy lines by requiring more traps between buoy lines and by introducing weak insertions or weak rope into buoy lines

- Modify existing seasonal restricted areas to restrict buoy lines (but allow ropeless fishing)
- Add up to two new seasonal buoy line closures
- Eight or more remote public meetings will be held during the public comment period. Comments must be submitted on or before March 1, 2021.

Presentations

- Proposed Rule and Draft Environmental Impact Statement for Atlantic Large Whale Take Reduction Plan Proposed Modifications for 2021 by C. Coogan

Board Actions for Consideration at the Meeting

- Consider preferred avenues for providing public comment

5. Consider Management Response to the 2020 American Lobster Benchmark Stock Assessment and Peer Review (10:15 a.m.-11:25 a.m.) Possible Action

Background

- The lobster 2020 benchmark stock assessment was completed in July 2020 which evaluated the status of lobster for the Gulf of Maine/Georges Bank and Southern New England stocks. The assessment was peer-reviewed virtually by a panel of independent experts in August 2020. In October 2020, the Board accepted the assessment and peer review for management use, which found that the GOM/GBK lobster stock is not depleted and overfishing is not occurring, and the SNE stock is significantly depleted. In addition, the Board adopted the new reference points recommended in the assessment. **(Briefing Materials)**
 - The American Lobster 2020 Benchmark Assessment and Peer Review Report can be found [here](#).
- The Board agreed to postpone a decision on management responses to the assessment results until the 2021 Winter Meeting. **(Briefing Materials)**

Presentations

- Review of Stock Status, Reference Points and Assessment/Peer Review Recommendations by C. Starks

Board Actions for Consideration at the Meeting

- Consider management response to 2020 stock assessment and peer review

6. Discuss Potential for Conducting a Management Strategy Evaluation for the American Lobster Fishery (11:25 a.m.-12:05 p.m.)

Background

- The ASMFC Management and Science Committee (MSC) formed a subgroup during the ASMFC 2019 Annual Meeting to develop a proposal for Management Strategy Evaluation (MSE) work on ASMFC-managed species. American lobster was among four priority species identified by the MSC that were considered the best candidate species for a MSE in the immediate future **(Briefing Materials)**.
- The MSC subgroup has developed a prospective work plan to outline potential focal areas, resource needs for a lobster MSE and associated workload tradeoffs for competing Lobster Board needs, and next steps if a MSE is identified as a priority by the Lobster Management Board **(Briefing Materials)**.

- The next steps are for the Board to identify the priority level and preferred focal area of a lobster MSE, identify roles and responsibilities for all personnel and potential funding sources for contracted personnel, and identify the timeline for MSE milestones and completion depending on focal area.

Presentations

- American Lobster Management Strategy Evaluation Prioritization by J. Kipp

Board Actions for Consideration at the Meeting

- Provide guidance on the priority level and preferred focal area of a lobster MSE

7. Review and Populate Jonah Crab Advisory Panel Membership (12:05-12:10 p.m.) Action

Background

- Jon Williams, and offshore commercial trap fisherman representing RI, has been nominated to the Jonah Crab Advisory Panel (**Briefing Materials**).

Presentations

- AP Nominations by T. Berger

Board Actions for Consideration at the Meeting

- Approve Advisory Panel nomination

8. Elect Vice-Chair (12:10-12:15 p.m.)

9. Other Business/Adjourn

American Lobster and Jonah Crab TC Task List

Activity level: Low

Committee Overlap Score: Low

Committee Task List

Lobster TC

- Annual state compliance reports are due August 1

Jonah Crab TC

- November 2020: Pre-assessment data workshop
- Spring-Summer 2021: Develop recommendations on initiating Jonah crab stock assessment
- Annual state compliance reports are due August 1

TC Members

American Lobster: Kathleen Reardon (ME, TC Chair), Colleen Bouffard (CT), Joshua Carloni (NH), Jeff Kipp (ASMFC), Kim McKown (NY), Conor McManus (RI), Chad Power (NJ), Tracy Pugh (MA), Burton Shank (NOAA), Craig Weedon (MD), Somers Smott (VA)

Jonah Crab: Derek Perry (MA, TC Chair), Joshua Carloni (NH), Chad Power (NJ), Jeff Kipp (ASMFC), Conor McManus (RI), Allison Murphy (NOAA), Kathleen Reardon (ME), Chris Scott (NY), Burton Shank (NOAA), Somers Smott (VA), Corinne Truesdale (RI), Craig Weedon (MD)

SAS Members

American Lobster: Kim McKown (NY, SAS Chair), Joshua Carloni (NH), Jeff Kipp (ASMFC), Conor McManus (RI), Tracy Pugh (MA), Kathleen Reardon (ME), Burton Shank (NOAA)

Jonah Crab: None

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
AMERICAN LOBSTER MANAGEMENT BOARD**

**Webinar
October 19, 2020**

These minutes are draft and subject to approval by the American Lobster Management Board.
The Board will review the minutes during its next meeting.

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Adjournment.....36

INDEX OF MOTIONS

1. **Approval of agenda** by consent (Page 1).
2. **Approval of proceedings from October, 2019** by consent (Page 1).
3. **Move to accept the American Lobster 2020 Benchmark Stock Assessment and Peer Review for management use** (Page 17). Motion by Dave Borden; second by Pat Keliher. Motion carried (Page 17).
4. **Move to adopt the following reference points as recommended in the 2020 Benchmark Assessment for the Gulf of Maine/Georges Bank stock, abundance reference points for the fishery industry target, the abundance limit and the abundance threshold to be 212 million lobsters, 125 million lobsters, and 89 million lobsters respectively. Then exploitation reference points for the same area, the exploitation threshold, and exploitation target to be the 75th and 25th percentiles annual exploitation estimates during the current abundance regime.**

Then, for the southern New England stock, an abundance threshold for the southern New England stock, which is set at 20 million lobsters and exploitation reference points to be the exploitation threshold, and exploitation target set at the 75th and 25th percentiles of annual exploitation estimates during the current abundance regime. These are consistent with the recommendation from the Stock Assessment Subcommittee and approved by the Peer Review Panel (Page 18). Motion by Jason McNamee; second by Raymond Kane. Motion carried (Page 20).
5. **Move to recommend to the ISFMP Policy Board a letter be sent to New York regarding the implementation of Jonah crab measures** (Page 35). Motion by Pat Keliher; second by Dave Borden. Motion carried (Page 35).
6. **Move to approve the Lobster Fishery Management Review for the 2019 fishing year, state compliance reports and *de minimis* status for Delaware, Maryland, and Virginia** (Page 35). Motion by Cheri Patterson; second by Raymond Kane. Motion carried (Page 36).
7. **Move to approve the Jonah crab FMP Reviews for the 2018 and 2019 fishing years, state compliance reports, and *de minimis* status for Delaware, Maryland, and Virginia** (Page 36). Motion by Cheri Patterson; second by Raymond Kane. Motion carried (Page 36).
8. **Move to adjourn** by consent (Page 36).

These minutes are draft and subject to approval by the American Lobster Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the American Lobster Management Board
October 2020

ATTENDANCE

Board Members

Pat Keliher, ME (AA)	Emerson Hasbrouck, NY (GA)
Sen. David Miramant, ME (LA)	John McMurray, NY, proxy for Sen. Kaminsky (LA)
Cherie Patterson, NH (AA)	Joe Cimino, NJ (AA)
Ritchie White, NH (GA)	Tom Fote, NJ (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Adam Nowalsky, NJ, proxy for Sen. Houghtaling (LA)
Dan McKiernan, MA (AA)	John Clark, DE, proxy for D. Saveikis (AA)
Raymond Kane, MA (GA)	Roy Miller, DE (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Jason McNamee, RI (AA)	Mike Luisi, MD, proxy for B. Anderson (AA)
David Borden, RI (GA)	Robert Brown, MD, proxy for R. Dize (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Phil Langley, MD, proxy for Del. Stein (LA)
Colleen Bouffard, CT, proxy for J. Davis (AA)	Pat Geer, VA, proxy for S. Bowman (LA)
Bill Hyatt, CT (GA)	Allison Murphy, NMFS
Maureen Davidson, NY, proxy for J. Gilmore (AA)	

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Kathleen Reardon, Technical Committee Chair	Kim McKown, Stock Assmt. Subcommittee Chair
Delayne Brown, Law Enforcement Rep.	Sonny Gwin, Jonah Crab Advisory Panel Chair

Staff

Robert Beal	Jeff Kipp
Toni Kerns	Laura Leach
Maya Drzewicki	Savannah Lewis
Kristen Anstead	Sarah Murray
Max Appelman	Mike Rinaldi
Lindsey Aubart	Julie Defilippi Simpson
Pat Campfield	Caitlin Starks
Dustin Colson Leaning	Deke Tompkins
Chris Jacobs	Geoff White

Guests

Pat Augustine, Coram, NY	Jason Boucher, DE DFW
Michael Auriemma, NJ DEP	Jeff Brust, NJ DEP
Russ Babb, NJ DFW	Bruce Carlisle, MA Coastal Program
Richard Balouskus, RI DEM	Matt Cieri, ME DMR
Peter Benoit, Ofc. of Sen. King, ME	Barry Clifford, NOAA
Dave Bethoney, CFR Foundation	Colleen Coogan, NOAA
Alan Bianchi, NC DENR	Jessica Daher, NJ DEP

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Guests (Continued)

Bill DeVoe, Esq. Bangor, ME	Derek Orner, NOAA
Lisa Engler, MA DMF	Penelope Overton, <i>Portland Press Herald</i>
Catherine Fede, NYS DEC	Rep. Sarah Peake, MA (LA)
Marianne Ferguson, NOAA	Derek Perry, MA DMF
Allison Ferreira, NOAA	Nick Popoff, FL FWS
Cynthia Ferrio, NOAA	Chad Power, NJ DEP
Rick Frenzel, Black Tree Inc	Tracy Pugh, MA DMF
Zachary Fyke, NOAA	Brandon Raguz, NOAA
David Gouveia, NOAA	Story Reed, MA DMF
Marin Hawk, MSC	Bill Samrau, NOAA
Heidi Henninger, Offshore Lobster	Burton Shank, NOAA
Jay Hermsen, NOAA	Melissa Smith, ME DMR
Matthew Heyl, NJ DEP	Somers Smott, VMRC
Carl Lemire, NOAA	Stephanie Sykes, Cape Cod Fishermen
Charles Lynch, NOAA	Helen Takade-Heumacher, FL FWS
Don Lyons, Audubon Soc.	Corinne Truesdale, RI DEM
John Maniscalco, NYS DEC	Beth Versak, MD DNR
Gregory Mataronas, Compton, RI	Megan Ware, ME DMR
Patrice McCarron, Maine Lobstermen	Anna Webb, MA DMF
Conor McManus, RI DEM	Craig Weedon MD DNR
Nichola Meserve, MA DMF	Angel Wiley, MD DNR
Brandon Muffley, MAFMC	Carl Wilson, ME DMR
Gerry O'Neil, Cape Seafoods	Chris Wright, NMFS
Noah Oppenheim, Homarus Strategies	Renee Zobel, NH F&G

The American Lobster Management Board of the Atlantic States Marine Fisheries Commission convened via webinar; Monday, October 19, 2020, and was called to order at 1:15 p.m. by Chair Daniel McKiernan.

CALL TO ORDER

CHAIR DANIEL MCKIERNAN: My name is Dan McKiernan from the state of Massachusetts; and I'm the Chair of the American Lobster Board for today. Welcome everyone to this virtual annual meeting. I, like a lot of you, wished we were in New Jersey, and not under house arrest as a lot of us are.

Toni has agreed to monitor the speakers for me today, so that if we have multiple hands up Toni will give me your names and in batch, so I don't have to be staring at that as I try to manage the meeting. Thank you for that, Toni. It's been a full year since this Board has met. Last was October of 2019.

APPROVAL OF AGENDA

CHAIR MCKIERNAN: We have a lot of business to attend to. The first is the approval of the agenda. Are there any additions or amendments to the agenda that a member of the Board would like to propose?

MS. TONI KERNS: I don't see any hands.

CHAIR MCKIERNAN: Seeing none, it is approved by unanimous consent.

APPROVAL OF PROCEEDINGS

CHAIR MCKIERNAN: Next the approval of the proceedings from October, 2019. Are there any requested amendments to the minutes of that meeting?

MS. KERNS: I don't see any hands.

CHAIR MCKIERNAN: Having seen none and heard none, it is approved by unanimous consent.

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PUBLIC COMMENT

CHAIR MCKIERNAN: Third on the agenda is Public Comment, and at this time we would welcome anyone who would like to speak on items that are not on today's agenda to come forward at this time.

MS. KERNS: I just want to make sure. Aubrey, your hand was just up, Aubrey Ellertson, and I don't know if you got confused on how to raise your hand or not, so I unmuted your line. If you wanted to make a comment, you just have to unmute yourself by turning your microphone green. Aubrey, I see your microphone is now green, I just don't hear you yet. Aubrey, we still can't hear you. Maybe if you could ask your question in the questions box. She hit it by accident, Dan, so we're good.

CHAIR MCKIERNAN: Toni, should we come back to this maybe under other business?

MS. KERNS: Aubrey said that she hit her hand up by accident.

BENCHMARK STOCK ASSESSMENT FOR AMERICAN LOBSTER

CHAIR MCKIERNAN: Oh, I'm sorry, all right thank you. Next on the agenda would be the Benchmark Stock Assessment for American Lobster, and I'll turn it over to Caitlin at this time.

MS. CAITLIN STARKS: Thank you, Dan. Actually, Kim McKown the SAS Chair is going to be giving the presentation.

CHAIR MCKIERNAN: Brilliant.

MS. KIM MCKOWN: Thank you, Kim McKown here, can you hear me?

MS. STARKS: Yes.

PRESENTATION OF STOCK ASSESSMENT REPORT

MS. MCKOWN: Okay, great. This afternoon I'm going to give an overview of the 2020 Lobster Assessment. The Lobster Management unit ranges from Maine to Virginia. There are seven management areas.

Historically three stocks were defined, Gulf of Maine, Georges Bank, and Southern New England.

In the 2015 assessment there was information indicating connectivity between the Gulf of Maine and Georges Bank stock, so those two are combined. We're continued with these combined stocks for this assessment. There is a variety of management measures that are used for lobsters, including min and max sizes, egg-bearing protections, and also in some areas closed seasons.

Since 1997 there have been 25 addendums to Amendment 3. Lobsters have a very complex life history. They need to molt to grow. Molting and maturity is linked, particularly for females. They have a pelagic larval stage. They go through four stages before they settle to the bottom. They generally prefer cobble or complex habitat.

Habitat is very vital for many life history parameters, and particularly temperature, salinity, dissolved oxygen and pH. Temperature is a real key environmental driver for lobsters. Temperatures in the northwest Atlantic are increasing, and are predicted to continue to increase. The optimal range for lobster is 12-18 degrees centigrade, and temperatures at 20 degree centigrade is considered a stress threshold.

Research has shown that the optimal temperatures in the optimal range a number of days has been increasing in both the Gulf of Maine/Georges Bank, and offshore southern New England. While the number of days above the stress threshold has increased in inshore southern New England. The graph over on the right show's temperature anomalies, so the days above are equal to 20 degrees centigrade.

What this shows is a deviation from the long-term mean, which is from the early 1970s to present. What you find in the early part of the time series the number of days above this stress

threshold was much lower than the long-term mean, while since the late 90s there has been increasing number of days above the stress threshold, which really indicates that the thermal habitat for lobsters in southern New England in the inshore area is increasing. Temperature impacts a lot of parts of lobster's life history. It affects growth, and we've found some changes in growth, and we updated the growth transition matrix in the model in the 2015 assessment. It affects the size of maturation. New research determined some changes, so we updated the maturation in the new lobster stock assessment.

We found that for Gulf of Maine and Georges Bank there has been a decrease in the size of maturity, and there is research that shows that increased temperature and also increased exploitation can cause a decrease in the size of maturity. For southern New England, on the other hand, we found an increase in the size of maturity, and that is due to the shift of the population to more offshore areas.

We find that temperature drives lobster behaviors from metabolism activity level. That has some implications for survey catchability, and we've explored that through catchability covariates in this assessment. Temperature affects recruitment, so there is a threshold of 5 degrees for egg development, threshold of 10-12 degrees for hatching and larval development.

We found, as I mentioned earlier that temperatures above 20 degrees certainly can cause increased stress and disease. We did some analysis looking at the prevalence of moderate and severe shell disease from the Ventless Trap Survey, and output from this data indicates that there has been an increasing trend in the prevalence of moderate to severe shell disease in the Gulf of Maine.

In the 2015 assessment we incorporated the effects of increased stress in southern New England in the model, with increasing natural mortality after the late 1990s. We've continued to utilize that in this assessment. We use a variety of pieces of information to assess lobster stock, this includes empirical data, such as fishery dependent landings and biological samples, fishery independent survey data from trawl

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and ventless trap survey, biological data, parameters such as mortality and growth, and environmental data such as temperature.

In 2006 we introduced model-free indicators, to help assess the stocks. These include mortality, abundance, and fishery performance indicators. For the 2020 assessment we included new indicators of physiological stress, and these include the number of days greater or equal to 20 degrees centigrade, and also the prevalence of moderate to severe shell disease.

Then of course we'll utilize the model results, such as reference abundance, reference exploitation, and the reference points. We utilized the University of Maine models. This was a primary model used in 2009, and the sole assessment model used in 2015 and this assessment. It's a statistical length-at-age model, and it has a variety of inputs, including life history characteristics, commercial information including trends, length and sex ratio.

Survey information, the trends and the lengths, we have information on legal size, escape vent sizes, also discard of ovigerous and v-notched lobsters. This comes from our sea samples. We want to really thank the Atlantic Offshore Lobster Association, and the Commercial Fisheries Research Federation for collecting samples for us in the offshore areas. This is really critical data that we need for the model, and we really thank you. We introduced recruitment covariates in 2015, and we have survey catchability covariates. We have a variety of outputs to the model, including goodness of fits, recruitment into the model, abundance in spawning biomass, population size composition, and reference abundance and effective exploitation. The model can also produce per-recruit reference points, but previous peer reviews have found that these reference points were not really realistic, and so these were not included in this assessment.

As I mentioned, we have utilizing survey catchability covariates, and the catchability just relates the survey relative abundance to actual abundance out in the lobster population. Information from multiple surveys have indicated that we're maybe experiencing changing catchabilities in these survey catchabilities.

We addressed this in the 2015 assessment by using nonlinear catchabilities. This was focused on looking at the fact that we've got limited geographic scales with some of our surveys, particularly our inshore surveys. That might be relating to changes in this catchability. For 2020 we did a further modification, where we developed environmental covariates.

This was to try to quantify specific processes that is causing these changes in catchability. We developed some temperature-based covariates. During the development we utilized information on lobster density to weight the temperature, so that we were trying to get our mean temperature for those thermal habitats where lobsters were inhabiting.

If you look at the graph at the top right, that is the information that is used to develop the catchability covariate, so the dots are the actual weighted temperatures. The green line is the annual mean temperature, and the blue line is the smooth trend over time. That is what information is used as our temperature covariate.

If you look at the graph on the bottom right, this shows how these covariates are used in the model. You can see the black dots are the actual data from the surveys of population abundance. The dark black line is the estimate from the model, survey abundance, including the catchability. While that lighter gray line is the estimated survey abundance with that catchability removed.

That thin line is what we believe is the true survey abundance. The University of Maine definitely developed, you have uncertainty estimates from the model. But we believe that they are underestimated, and that is because parameters such as growth, natural mortality and fishing selectivity are not estimated in the model, but input from outside.

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Trends in the model are more certain than the absolute scale. That is important, because we utilize a trends-based reference point. We're using several methods to address model uncertainty, they include sensitivity analysis, and this is used to understand different assumptions, and also a data inputs into the model.

We have 11 sensitivities that are similar for both stocks, and then we have a number of sensitivities that were different for the two different stocks. In general, we found that the trends were much less uncertain than the actual value. We found for the Gulf of Maine/Georges Bank the biggest difference was found in sensitivities where we changed the growth, and used what we felt was slower growth using southern New England growth rate, and utilizing changes in gear selectivity. For southern New England the biggest change was increasing and decreasing natural mortality. We also did historic retrospective analysis, and this is where we compared the base case of the 2015 assessment to the base case of this 2020 assessment. This is to look at historic stability of the analyses. We found for Georges Bank/Gulf of Maine stock that it was very stable, and not much difference between the two stocks.

The trends for southern New England were very similar, except for after the 2000s we found that abundance was declining more rapidly in the 2015 assessment compared to the 2020 assessment. The last year in the 2015 assessment the estimated abundance was approximately 7 million lobsters, while for the 2020 assessment that same year the estimate was 11 million lobsters.

This new assessment, the decline is not quite a shock as the older one. We also did traditional retrospective analyses, where you remove a year and rerun the model, and then remove another year. We did a number of peels, and then you look at how different is that last year compared to what the base case is.

For the Georges Bank/Gulf of Maine stock, we only had a very mild retrospective analysis and estimated trends, and the scales were pretty stable. There was a little bit of an overestimate of abundance found in the retrospective. For southern New England there were similarities in the trajectories. Abundance is more comparable than the exploitation.

We did find there was more variability in the 2020 assessment retrospective analysis in 2015 for southern New England, and some of that might be due to the fact that some of the surveys, especially inshore were in very low level, particularly Connecticut. For several years we collected no females in that survey, and Massachusetts for one year.

Also, there has been a decrease in the size of lobsters, seeing smaller lobsters from the Northeast Fisheries Science Center offshore than we have in the past. Some of these recruitment trends may be affecting the retrospective analysis. This shows the result for the Gulf of Maine/Georges Bank model.

The abundance estimates are on the top left graph. The recruitment is in the bottom left, and spawning stock biomass is in the bottom right. Sex is combined on this dark black line. Females are the dark gray, and males are the light gray. If you look at abundance, recruitment, and spawning stock biomass it's increased pretty much over time, and current levels are the top of the time period.

We did see for recruitment a real striking increase in the last year, and we think that might just be due to some instability of the terminal couple of years of the assessment. For the top right graph is exploitation rate. In early years we saw higher, stable exploitation, and then it declined in the late 80s, and we've seen a lower, stable exploitation rate after that.

As I mentioned before, we utilized a number of different indicators to also look at the stock status. These are model-free indicators if utilizing for abundance we're looking at the survey data. For these graphs we're looking at the annual level to see whether or not it's above the 75th percentile or below the 25th percentile. Values that are below 25th percentile are considered negative, and we've coded

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those in black. Values above the 75th percentile are considered positive, and they're coded in white. Anything in between is considered neutral, and that is in gray. The different surveys are the Northeast Fisheries Science Center, over on the left two columns, fall and spring, in the middle is Maine/New Hampshire survey, and on the right is Massachusetts.

We're seeing four different indicators here, the left table is spawning stock abundance, the next one to the right is full recruit abundance, the further one is recruit abundance and the last one on the right is the survey and encounter rate. If you look on the last line of the table that is the 2014 to 2018 mean, and as you can see for all of the abundance indicators, we're seeing positive indicators, which shows the stock is in good condition.

As you look at the survey encounter rate, all but one is positive, and the Maine survey in the spring is neutral. I would like to point out, Northeast Fisheries Science Center, which is the first two columns on the left, there are a number of positive indicators in the last decade indicating that the numbers of lobsters being caught in that survey has been increasing over time.

Now while we saw a lot of positive indicators for the adults and recruits, these are showing the young of the year abundance indicators. This is from settlement surveys in Maine and Massachusetts, and it's going from the northernmost statistical area 511 on the left to the southernmost 514 on the right.

If we look at the 2014-2018 average, we're seeing neutral to negative indicators. The negative, particularly in the southwest area in 513 west and 514. This points out some concerns that we may be seeing declines in the settling lobsters. There has been some research that does indicate there may be some increased thermally suitable habitat for settlement that isn't being monitored by these settlement

surveys. This is particularly true in more northeast Gulf of Maine.

We also examined abundance indicators for the Georges Bank sub-stocks, just to make sure that it wasn't masked by being combined with a larger stock area. For these indicators we're looking at information from the Northeast Fisheries Science Center Survey, and over on the left is spawning stock biomass.

Next one is full recruit, then recruit abundance, and the last table on the right is the survey encounter rate. If we look at the 2014-2018 means, it's positive for spawning stock biomass, full recruit abundance, and for the lobster encounter rate. But we are seeing neutral levels for the recruit abundance.

We also looked at stock productivity. The graph over on the top left shows the spawning stock biomass on the X axis, and the recruitment on the Y axis. The straight line is the long-term estimate, and the actual data points are plotted on that line. Over on the bottom left are the early years of the assessment, and over on the top right are the later, current years of the assessment.

You can see that there has been an increasing trend in both spawning stock biomass and recruitment over time. The graph on the lower right is looking at productivity to the steepness in the stock recruitment curve, and we see that early in the time period there was increase in this steepness value. Starting in the 90s there seems to be a leveling off, and then in the mid-2000s we saw an increase again. This graph suggests that reproductive success is sufficiently high, to allow increase to the population. One thing I want to point out in this graph is that spawning stock biomass has been lagged to match up with recruitment, so the last year of recruits in this class, 2018, corresponds to 2013 spawning stock biomass. Therefore, the recruitment of current spawning stock biomass is not in this graph.

Now, I would like to go to the southern New England model results. Again, we have the abundance on the top left, recruitment bottom left, and spawning stock biomass bottom right. You can see for all three of

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these there has been an increase into the mid to late 90s, and then a consistent decline after that period.

Currently all values are at the lowest in their time series. If we look at the top right that is the exploitation rate. Early in the time series we had a higher, stable exploitation rate. We saw a decline around 2003, and now we're in a lower, again stable exploitation. That year of decline is right about the time that we changed to increase the gauge size to 3 and 3/8, over several years during that time period.

Again, we would like to look at the abundance indicators. On this graph we have the spawning stock biomass, full recruit abundance, and recruit abundance. We're looking at Northeast Fisheries Science Center on the left, Massachusetts the next one, Rhode Island, and then Connecticut surveys.

As you can see for all of these indicators, the majority of them in recent years are negative, neutral to negative. The 2014-2018 average in all of them, six out of the eight surveys are negative. This shows the lobster encounter rate on the left, and the young of the year indices on the right. For lobster encounter rate, all but one survey is negative.

We look at the young of the year abundance, this shows the young of the year settlement surveys, for Massachusetts on the right, Rhode Island, and then larval surveys of Connecticut, eastern Long Island, and then western Long Island on the right. The western Long Island larval survey that ended in 2013, so we don't have recent data.

If you look at the other data, the Rhode Island young of the year settlement and eastern Long Island larval survey is showing us negative abundance. If you look at the Massachusetts, it's neutral, but in fact the last four years of that survey were actually zeros, so that neutral is rather misleading.

Looking at the abundance indicators, it corroborates what we saw with the model results that this stock seems to be at low levels. Looking at productivity for southern New England, we look at the top left graph, again at spawning stock biomass on the X axis, recruitment on the Y, and the straight line is a long-term average.

The data is plotted, the data on the top left are the early years, and the data on the bottom left are the current years. There has been a clear shift in recruitment over time. We found that in early years there was sufficient recruitment to allow the population to increase. That occurred until about the mid-90s. Then we started to see a period of time where recruitment was decreasing, but spawning stock was increasing. Starting about 2000, we saw a real shift in recruitment, where recruitment levels were declining enough that the stock was not productive enough to continue to produce FSC, and that started to decline, and that has continued into the current day. If you look over at the productivity graph on the right, you could see that steepness was pretty flat in the early part of the time series.

It declined in the early 90s, and then sort of flattened off in the early 2000s, and then we've seen a decline again since 2007. This indicates that recruitment is not sufficient enough to sustain a stable population at current exploitation rates. There are some issues with the current reference points, which is looking at the time period from the mid to late 1980s to 2003.

We've seen some regime shifts that indicate some changes in drivers to lobster survival. Current conditions are not comparable to that reference period, and we've certainly seen a large change in abundance in both stocks since that time. The environmental conditions we've seen have changed, and will continue to change in the future.

We are going to recommend new reference points. These have been developed with a regime shift analysis. The analysis determines two breakpoints for Gulf of Maine and Georges Bank that indicate three different regimes, one occurring in 1996, and the other in 2008. For southern New England the analysis

noted one breakpoint. This occurred in 2002, indicating two reference periods.

We also examined a number of different environmental datasets, to see if there was any consistent time period of regimes for what we thought might be drivers for lobster abundance. For Gulf of Maine/Georges Bank, a number of the datasets indicated strong support for a regime shift starting in 2010, and this showed a couple of pieces of data up on the top right is Gulf of Maine/Georges Bank area wide, basin wide temperature, and this indicated a real strong regime shift both spring and fall in 2010.

The bottom left graph shows the abundance of the copepod *Calanus finmarchicus*. This too indicated very strong regime shifts in 2010 indicated much lower levels of *Calanus* in recent years. For southern New England over on the right, we looked at the annual degree days over 20 degrees from the Millstone Power Plant, and that showed strong regime changes in 1998 and 2012.

Some of the other data we saw did indicate some regime shifts, but the data generally showed an increasing trend in time such as the temperature data, temperature anomaly data from the Mid-Atlantic which is shown on the bottom right.

We are recommending three new reference points based on these regimes. The first is the fishery industry target, and that is recommended for Gulf of Maine/Georges Bank only. Calculated as the 25th percentile of the high abundance regime. The feeling is if current levels go below that it's probably not biological concern, it potentially could be just occurring capacity correction, since we're at such high levels at this point. But it certainly could be an economic concern, and we strongly recommend a post-assessment economic analysis to determine if and what sort of management should be implemented if we went below this level.

The next reference point is called the abundance limit, and again this is for the Gulf of Maine/Georges Bank stock. Calculated as the median of moderate abundance regime, the stock would be considered depleted if the three-year current average reference abundance was below this limit, and recommended action to halt this decline.

The final recommended reference point is the abundance threshold, and that is recommended for both stocks. This is the average of the three highest years during the low abundance regime. The stock would be considered significantly depleted if the current average was below this threshold, and significant management action to halt the decline of abundance and increase reproductive capacity, such as a moratorium.

We're recommending an exploitation target, which would be the 25th percentile of the exploitation estimates during the current regime, and exploitation threshold, which is the 75th percentile of exploitation during the current abundance regime. If current levels went below this, we would recommend to initiate additional research to better understand the cause of this increasing exploitation.

The next few slides I'm just going to show these reference points, and they will be set up very similarly. The shaded areas, the dark gray on the left is the low abundance regime. The light gray in the middle is the moderate abundance, and the white on the right is a high abundance. The dotted black line on the top is the proposed fishery target.

The dashed line in the middle, the black one is the proposed abundance limit, and the solid black line on the bottom is the proposed abundance threshold. Just for comparison, we've also plotted the old target, which is the red dotted line, and the old threshold, which is the solid red line. You can see the dot over in the top right-hand corner is the average of the last three years. That is our current estimate of abundance. That is above both the limit and the fishery targets.

This slide has the exploitation rates. The dotted black line is the proposed target, and the solid black line is

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the proposed threshold, with the red line being the old target threshold. We realize that there is a much narrower window for exploitation in these new proposed targets, but we have found that exploitation is pretty stable over time.

The management measure, our recommendation if we go below, or actually go above this target is for further research, and not taking management action. For Gulf of Maine/Georges Bank, the current level is below both the threshold and the target. This has the abundance reference points for southern New England.

Only two regimes were indicated for southern New England. On the left in the dark gray is the high abundance regime, and on the right in the white is the low abundance regime. Only one reference point is proposed for southern New England, and that is the abundance threshold. As you can see, the new proposed threshold is below the old threshold, but our current estimate, the black dot on the lower right-hand corner, is below all of the reference points.

These are the exploitation reference points. You can see that the newest reference points been developed from the new regime period, the black being the threshold and the dotted being the target, and the current level is above the target but below the threshold. The old reference points, due to the time period that they were developed, certainly coincide with the, looks like the older regime for exploitation rate. This slide shows the stock status for the Gulf of Maine/Georges Bank. On the X is the reference abundance, and on the Y-axis is effective exploitation.

The vertical black solid line is the proposed from the threshold, and the vertical dashed line is the proposed limit. The horizontal line is the reference exploitation. If we look in the right-hand bottom box, the dark circle there is our current estimate of where the population is. That dot is to the left at higher abundance levels than the threshold and abundance limit.

Therefore, the stock is not depleted, and it's also below the exploitation threshold, so overfishing is not occurring. No management action is recommended for the Gulf of Maine/Georges Bank stock. We have some considerations for Georges Bank/Gulf of Maine. Stock wide a recruits and abundance is at an all-time high, so these trends differ at a smaller spatial scale.

Encounter rates indicate the distribution is expanding in offshore waters, so it remains important to determine catchability, and be able to estimate true abundance through overall trends. Fishery efficiency of exploiting legal abundance without clear respect to abundance and catchability changes, makes interpretation of exploitation time series difficult.

Young of the year trends, particularly in the southwest portion of the stock is concerning, and we need to monitor that subsequent to the assessment. We have seen concerning trends in shifts of effort, particularly southern New England effort may be shifting to the Georges Bank, and we'll need improved effort data that will track this trend. The new stress indicators remain relatively low for this stock, but they are trending upward, particularly in the southwest portion of the stock.

This shows the status of the southern New England stock. We have the abundance threshold is the vertical solid line, and exploitation is horizontal. The current estimate is the black dot in the lower-left corner. The abundance is below the abundance threshold. Therefore, the stock is significantly depleted. Exploitation is below the threshold, so overfishing is not occurring. Due to the depleted condition of the stock, significant management action is necessary to provide the best chance of stabilizing or improving abundance and reproductive capacity.

Considerations for southern New England, stock abundance is at all-time-low levels, and the stock is in recruitment failure. Encounter rates indicate distribution is contracting both inshore and offshore. Landings have continued to decline to its time series low in 2018. Stress indicators indicate stressful environments that may be having lethal and sub-lethal effects, and mechanisms have resulted in decreased

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recruitment rate that will pose significant challenges to stock rebuilding.

We have recommended that the assessment be updated in five years, but in between we feel that we should have an annual update process. Due to this changing environment, we think it's really important to be able to track recruitment for future abundance. What we're recommending is annual reviews of trawl survey recruit abundance and encounter rates, ventless trap survey abundance indices, and young of the year settlement indicators.

New for this assessment, we developed simulation-based projections. We developed three sets of projections; one projects the base-case model ten years in advance. The next we're projecting all the different sensitivity runs ten years in advance. That is to get an idea on the uncertainty of these projections. We also did a prior projection, where we projected the base case from the last assessment and compared it to the 2020 assessment. For these projections we have three sets of recruitment, based on the assessment model recruitment from the current regime.

For both southern New England, 2003-2017, and Gulf of Maine/Georges Bank, 2009-2017. We didn't include the 2018 or '19 data because of concerns that they were unstable, and weren't well estimated. The three sets of recruitment were no trend, current trend, and the covariate trend. I'm just going to show you the base-case projections.

This one is for Gulf of Maine and Georges Bank, and the top graph shows the recruitment with no trends. Middle is the projection with the recruitment with continuing trends, and the bottom is recruitment with the covariate trend. We can see for the no trend and the current trend that it's got a little bump in abundance, but then it levels off.

For the bottom one, the covariate trend abundance continues to increase all through

the projections, which may be overly optimistic. This is the southern New England base case. Again, no trend on the top for recruitment, current trend in the middle, and covariate trend on the bottom.

For southern New England the current trend and covariate trend shows similar projections with a decline in abundance through time, while the no trend shows a potential increase in abundance. I don't know if we're going to take questions now, or if we're going to have Mike do his presentation first, and do questions for everyone after that.

CHAIR MCKIERNAN: Kim, I think the plan was to have Mike give his presentation next, and then both of you could take questions, especially if many of the questions that people may have about your presentation may be addressed in Mike's presentation.

MS. MCKOWN: Yes, that's wonderful, thank you.

CHAIR MCKIERNAN: Mike Celestino, take it away.

PRESENTATION OF PEER REVIEW PANEL REPORT

MR. MIKE CELESTINO: I'll give a brief bit of background information. I'll get to the substance of our review. The peer review of the lobster assessment was conducted via webinar from August 10-13. The Review Panel met on the 14th to do some (feedback). The review focused on data inputs, model results, the overall quality of the assessment, and the outcomes were assessment and review reports that will be available at the link on the slide.

The Peer Review Panel was comprised of myself and three additional technical reviewers with expertise such as lobster biology, population dynamics, stock assessment modeling, and climate change effects on marine populations. I want to extend a note of gratitude to the other reviewers, Dr. Adam Cook with Fisheries and Oceans Canada, Dr. Bill Hartford with Nature Analytics, and Dr. Rebecca Selden at Wellesley College.

It was a terrific group of colleagues to work with, very engaged. I'll also take a second to thank the

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Assessment Team, who were all very responsive to our questions and additional tasks. The Review Panel was very complementary of the work that the TC and others had done on this assessment. I'll also take a second to thank Pat Campfield, who was also very helpful as we worked our way through this review.

I'll touch quickly on the overall findings. The Panel thought that the Assessment Team thoughtfully completed all their terms of reference, and that the assessment was suitable for management. The overall major finding was that the University of Maine model should be used as the basis of stock status, and Kim just covered actual status determinations, so I won't recover those.

This concludes kind of big picture background items. I'll move on to some of the particulars, but I'll just note quickly though that we covered a lot of ground during the review, and in the interest of time I'm going to paint with pretty broad strokes, and really just discuss some of the larger takeaways.

But at the end of the presentation and questions, I'm happy to go into more detail on the event. To review our first term of reference was to evaluate the thoroughness and treatment of data used in the assessment. We thought that the breadth and range of data examined for the assessment was extensive, and commended the Assessment Team for their efforts.

Regarding the various surveys, inshore and offshore trawl surveys, the ventless trap survey, for example. The Panel thought that having those multiple lines of evidence to describe trends in biomass was the overall strength of the assessment. We did recommend a couple of avenues of further exploration for the ventless trap survey, how the effort regarding that survey is treated, for example, and the potential for substrate to effect catchability.

The Panel thought that inclusion of the environmental catchability covariate was a really strong addition to the assessment, and helped resolve some of the uncertainty in the relationship between survey index and true population abundance. We noted there was room for some further refinement that could be done in future assessments as well.

In terms of data considerations and decisions, the Panel thought that the Assessment Team's judgments were all generally appropriate. For example, where sufficient biological samples weren't available to characterize the length composition data, the gap-filling protocol was followed, and that gap-filling protocol was an improvement over the previous assessment.

That protocol also highlighted to the Panel the importance of adequate sampling to minimize the need for gap filling. Pooling data for example, might mask changes in fishing mortality, and could be contributing to some of the stability that we see in exploitation rates from the model. The Growth Transition Matrix, a key component of the model hasn't been updated in a number of years. The Panel considered the Growth Transition Matrix a weakness, and needed an update. Our next term of reference was to evaluate the methods and models used to estimate the population parameters and reference points.

We found the use of available life history information all to be appropriate. We did recommend that an important additional feature for future assessments would be to allow for time-varying life history parameters directly in the model. For example, allowing for time-varying growth, was identified as a high research priority for future assessments.

The current model is to no discard mortality, or mortality rate at 0 percent. But we noted that given that shell disease exists on the shell, it's possible that shell disease may be increasing discard mortality, and that might warrant some additional investigation as part of future updates and assessments.

We discussed natural mortality in southern New England with the Assessment Team a reasonable bit

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during the review. We found that the approaches to estimate natural mortality were reasonable, but noted that the value of natural mortality in the second time stanza in the late nineties to the present, was based on an analysis from the 2015 assessment.

We felt that natural mortality should be based on the current assessment. The Assessment Team did explore an additional time-varying natural mortality scenario during the review. But the Panel thought that this exercise merited a concerted effort to see how M is changing over time, particularly as it might relate to inferences to a level of exploitation.

Survey CVs are not directly incorporated into the model, and the Panel recommended evaluating the effects of that on model performance, model preference. Ultimately, one of the large Panel conclusions was that we agreed with the Assessment Team's choice of the University of Maine model as the preferred model for stock status.

The broad, thoughtful range of sensitivity runs were generally insensitive to various inputs, though we acknowledged that as Kim just did, there is less uncertainty in trends than the absolute scale. Our next term of reference was to evaluate identification and characterization of environmental or climactic drivers.

Here again, the Panel thought the breadth of potential environmental and climactic drivers was thoughtfully considered by the Assessment Team. We thought the variables considered likely captured the full set of environmental variables thought to be important for lobster population dynamics.

The Assessment Team used a particular analysis to determine when there were substantive breaks in the time series. Kim showed some of those slides earlier. We recommended that support for those breakpoints could be bolstered with some complimentary analyses that provide the probability of change across

those various breakpoints, and we made some recommendations in that regard. We saw during the review that specific years in which regime shifts were considered, or have occurred was sometimes variable. We recommended that perhaps an improvement to the analysis would be to formally assess the correspondence in time across those different environmental variables. Here again we provided a technical analysis in that regard. The Assessment Team examined changes to productivity through the use of dynamic linear modeling, so this was the productivity plots that Kim showed earlier.

Those were designed to examine changes to the steepness or productivity parameter over time. The Panel thought those analyses were a real positive advancement for the assessment, and will likely lead to very useful hypotheses to further exploring and understanding the drivers to changes in productivity that as an example could inform the recruitment covariates in the future.

The assessment document summarizes the strong evidence for ocean warming, leading to the idea again that suitable settlement habitat might be increasing in the Gulf of Maine, and the Panel recommended interpreting the young of year indices in concert with an index of predicted settlement habitat.

In other words, sort of expanding the young of year index with an appropriate extended habitat. We were also asked to evaluate estimates of stock abundance and exploitation. One of the main themes that the Review Panel and the Assessment Team commented on were the trends in abundance and exploitation for lobsters are less uncertain than their scale.

The two plots at the bottom sort of show the range of sensitivity runs that were explored, all sort of resulting in the same trends. But since reference points are based on percentile, sort of putting everything on a relative scale, the Panel thought that the reference points compared to the corresponding model outputs were appropriate for management.

The Panel concluded that the suite of model diagnostics suggested reasonable fits to the data. There were some exceptions that might be related to

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the growth transition matrix, so here again the Panel supported the Assessment Team's recommendation that updating and appropriating time-varying growth matrices is a high research priority.

Then finally, the Panel thought the projection methodology used in the assessment was sound and helpful advancement with the assessment. We were asked to evaluate the methods used to characterize uncertainty. Kim touched on this. The Panel agreed with the Assessment Team that standard errors coming out of the model are underestimates of uncertainty, but that the suite of sensitivity runs is an appropriate approach for characterizing uncertainty.

One of our terms of reference was to evaluate the diagnostic analyses that were performed. We felt that the sensitivity analyses included a thorough set of alternative model configurations that were appropriately contrasted against the base-case model. The main Panel recommendation coming out of this term of reference was for the Assessment Team to formally evaluate the sensitivity of model results to starting values.

In other words, we're ensuring that the model always converges to the same solution independent of the model's starting values. We were asked to evaluate the indicator-base analyses. The Panel was very excited with the model-free indicators and consider its inclusion in the review a strength to the assessment. We found the system very useful. In terms of deriving percentiles from the full time series, the Panel commented about a potential for shifting baselines. For example, as additional years are added on to a time series, the absolute values associated with a percentile break where that 25th or 75th percentile fall, as an example, can potentially lead to blocks being labeled at neutral in some years, and then positive or negative in another. So we just recommended further consideration as to how that time series would be updated. In terms of

the subset of indicators, the Assessment Team proposed to update on an annual basis. We recommended providing some additional details on a justification for the selected subset.

The Panel asked during the review for a preliminary analysis of the relationship between some of the indicators and some of the model outputs. Those early results were really promising. We recommended further exploration for potential development of either indicator-based management, or a science-based rule that would trigger an earlier than scheduled stock assessments, so for example, if three of four indicators change from positive to neutral that might trigger the earlier than scheduled assessment.

In terms of communication, the Panel was very supportive of the stress indicator that was new for this assessment, but recommended reconsideration of some of the terminology. For example, the Panel questioned whether a moderate stress time period of shell disease, where shell disease might be between 25 and 75 percent.

We questioned whether that was sort of appropriately characterized at neutral, it might be more appropriate to relabel some indicators as low, medium and high versus good, neutral or bad. A similar logic carried over to the effort indicator. We sort of discussed whether a low effort indicator should be considered positive if that low effort is a result of fishery collapse, for example.

Then finally, without wandering into the weeds, I'll just note that the Panel offered some suggestions for some additional indicators that might be explored in the future to help communicate stress, stock distribution, and even some survey catch rates. We also suggested re-categorizing some of the fishery performance indicators as economic indicators. We were asked to evaluate the current and recommended reference points, and recommend stock status.

The Panel concluded that the development of regime-based reference points and use of multiyear averages to determine stock status was a commendable advancement and appropriate. We agreed with the

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Assessment Team's position that the reference points from 2015 assessment were no longer appropriate, given environmental and abundance changes that had occurred during that previous time periods, the '80s through the early 2000s.

In terms of stock status determinations and related to comparing the three-year average abundance exploitation to the relevant reference points. We recommended the Assessment Team investigate alternate averaging or smoothing techniques that are robust to trends. It pointed out that for example, a running average results in values that are systematically higher than the terminal year estimates from decreasing trends and vice versa over increasing trends. We also supported the Assessment Team's recommendation for an economic analysis to provide advice to stabilize the fishery when or if the Gulf of Maine abundance falls below its target, and again Kim has already described the stock status and the Review Panel concurred with those determinations. We were asked to review the research recommendations. We thought again that the Assessment Team developed a really well thought out list to prioritize research items.

We did identify what we view as the three highest priority items, which we grouped into all aspects of growth, time-varying natural mortality in southern New England, and issues related to the stock structure. Then in terms of the final term of reference, review recommended timing of the next benchmark. There again, the Panel agreed with the Assessment Team's recommendation of a benchmark in five years.

This would allow the Assessment Team to address some important research recommendations. The Panel also supported the SAS proposal to initiate annual data updates. We supported updating all indicators on an annual basis. Again, as I commented on earlier, supportive of the idea of investigating

further the potential development of a science-based rule that would trigger an earlier than scheduled stock assessment. With that I am happy to take any questions.

**CONSIDER ACCEPTANCE OF BENCHMARK STOCK
ASSESSMENT AND PEER REVIEW REPORT FOR
MANAGEMENT USE**

CHAIR MCKIERNAN: I think at this time we could take questions to Kim, and to you Mike as well. For the Board, we are going to try to get a motion today to accept the assessment and the peer review, so I hope folks have questions, so that you can vote with confidence. Toni, do we have anyone who has questions?

MS. KERNS: Yes, to questions. There are some people that got muted over the course of the presentation, because we weren't sure what some background noise was, and I just want to unmute their lines. In case their lines come open, I want them to see that so that they can unmute themselves. All right, now we have a question from Jason McNamee.

CHAIR MCKIERNAN: Jason. Toni, do I need to unmute him, or do you do that?

MS. KERNS: He is muted by himself, and David we hear you, so you can mute yourself now. Your sound does work, and now Jason needs to also.

DR. JASON McNAMEE: Sorry, Mr. Chair. I think I was momentarily muted by the organizer as well, but it seems to be fixed. Thanks for the time to ask a question. Kim and Mike, awesome job. That was a ton of material, and my complements. The lobster assessment is a beast of an assessment, so that was a nice job presenting all the information, and good job to the team of pulling the assessment together. It's an enormous amount of work.

I have a question for you, Kim, and it has to do with the reference points, so I'll start by saying I love what you guys did with the reference points. I think it's a big leap forward from what was in place for using that change-point analysis. I just wanted to note that up front, so you don't think I'm being critical of that at all.

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But what I was curious about kind of will help inform some of what happens, at least for me later on in this meeting is. I know that, I'll call them biological-based reference points, have been tested previously, and I'm talking about things like MSY, but more likely things like SPR approaches, like F40 percent and things like that. I'm wondering, it wasn't clear to me if those were tried during this assessment process, or if not, if you could give us a little bit about the history there of why when we tried these last time, we weren't giving you reasonable management advice, or whatever it was. I would just like to know a little bit more about whether those were tested and reviewed this time, and if not a little bit of information as to why.

MS. McKOWN: They were not reviewed in this assessment, but they were reviewed in the 2015 assessment, and what we found there is we looked at F-10 percent, I believe. Using that as the reference point, it indicated that the Gulf of Maine stock, which was at that time at peak abundance and low exploitation that overfishing was occurring.

Meanwhile, for southern New England, because of the low size at maturity, so the majority of lobsters are mature before they hit legal size, but the increase in the legal size since the early to mid-2000s, it found that no matter how hard you fish the stock it wouldn't be overfished. Overfishing would not be occurring.

It just continued to be unrealistic, the information we were getting from the biological reference points. One of the concerns was that part of the problem might have been the growth transition matrix. It certainly, as things changed it's probably becoming more problematic that we have one static growth transition matrix, because growth has been different in the early part of the assessment than it is now. That may be causing some of that change.

DR. McNAMEE: Thank you very much, Kim. That was my hunch, but I appreciate you just clarifying that for me.

CHAIR McKIERNAN: Toni, any other Board members with questions?

MS. KERNS: Bill Hyatt, Dan.

CHAIR McKIERNAN: Okay, Bill.

MR. WILLIAM HYATT: A question for Kim. I think this has to do with either your next to the last or third from the last slide, it was projection scenarios for southern New England. In that slide you had the top three graphs. The top graph was a projection assuming no trend, and it was markedly different from the one dealing with current trends and the bottom one, which I believe was covariate trends. If you could just explain why, I mean it's a marked difference, just I might have missed something. But what was behind that difference?

MS. McKOWN: The difference, the one that has no trend, it took the information for recruitment from the current regime, and that is from 2003 to 2017, and it just randomly selected any of those recruitments. It could be selecting them from 2003, where recruitment was much higher, as you saw from the model output than it was in 2017.

By just randomly selecting it was saying, recruitment might not be as bad as it is now, so the population might start increasing. Meanwhile, the other two graphs were using the actual linear trend and projecting that trend into the future, so it's been going down, so it would continue to go down. It worked, and that's why you're seeing such a difference in those graphs. Does that make sense?

MR. HYATT: Yes, thank you.

CHAIR McKIERNAN: Toni, any other questions coming from the group?

MS. KERNS: David Borden, followed by Colleen, followed by Roy Miller.

CHAIR MCKIERNAN: Thank you. Okay, David Borden.

MR. DAVID V. BORDEN: I guess this is a point for Kim. First of all, Kim, I think you guys collectively and the Peer Reviewers did an excellent job. This is one of the best pieces of work that I've seen in my career on the issue. I think it's really comprehensive and useful. Having said that, could you just go back to the southern New England abundance reference points figure, please? Could you put that up? Not the exploitation, the abundance, next one. Okay.

I just want to make a quick point. I think as most people on the call know, I was working for the state of Rhode Island in 1998, and still actively engaged in, well lobster management. I just want to use this as an example, and express a concern about it. In 1998 we had a number of discussions, the department did at that time with the industry, about the need to what we now call resiliency, add resiliency to the stock.

The reaction at that point basically was, everything is going great. We don't need to change anything. I'm sure that Commissioner Keliher occasionally hears the same points from his constituents. But if you look at that at that one figure. That one figure is a really powerful figure, because in a period of basically five years we went from being on top of the world, where people were buying new boats and investing heavily in new traps and so forth, to the point where people thought it was the end of the world.

I just want to say that for the reason that at some point we're going to accept this, and then we'll get into a discussion of how to react to it. What we need is a mechanism that starts to work on some of the issues in advance of there being a crisis. Once you go over that edge, and the fishery starts to decline.

Then if the industry is losing 10 percent due to stock decline, you want to impose management

measures that adds another 10 percent to that. It's a big burden on the industry. One of the ways that we can address this is try to get ahead of it, instead of waiting until it's in place. Keep that in mind, and I would also add, Mr. Chair, at the appropriate time I'm happy to make a motion to accept the assessment and the peer review, so thank you.

CHAIR MCKIERNAN: Next on the list is Colleen Bouffard, Justin Davis's proxy.

MS. COLLEEN BOUFFARD: Thank you, Mr. Chair. Kim and Mike again, I would like to just reiterate the sentiment with what a great job this assessment was. I think looking at the regime shift is a huge step forward for assessing the lobster stock. The question that I had kind of goes back to the slide that Bill Hyatt alluded to earlier, with the projections for southern New England. There was a bullet on there that said an additional projection was done, where fishing mortality was removed. I'm just wondering, was that included in those graphs that we saw, or was that another analysis that wasn't in that slide?

MS. MCKOWN: I'll be honest, Colleen, I don't know. I would have to get back to you on that.

MS. BOUFFARD: Okay, thanks, Kim.

CHAIR MCKIERNAN: Roy Miller, you're up next.

MR. ROY W. MILLER: Kim and Mike, nice job, very impressive. I have a question concerning something Kim said. Specifically, she said that significant management action would be necessary to stabilize the southern New England stocks. My question is, did the Assessment Team formulate what those specific significant management actions would be, or is that something else we're going to get to this afternoon?

MS. MCKOWN: The only thing we threw out there as an idea is possibly a moratorium, but we felt that management measures really isn't what the Technical Committee should be doing.

CHAIR MCKIERNAN: All right, thank you, Kim. Is there anyone else?

MS. KERNS: We've got Emerson Hasbrouck, and now Jason McNamee.

CHAIR McKIERNAN: All right, Emerson.

MR. EMERSON C. HASBROUCK: Thank you Kim and Mike for your presentations. For the slide that is on the screen right now that shows that precipitous drop off. How much of that was caused by the collapse of the Long Island Sound fishery? That is the first part of my question, then I have a follow up.

MS. McKOWN: We actually ran sensitivity runs where we excluded, first off one just excluded the Connecticut Trawl Survey, and then another one we excluded everything from 611, the Connecticut Trawl Survey plus all of the landings. It gave similar trends. I have to actually look at my notes. I think the abundance was a little bit lower in the terminal year in the run without southern New England, but it shows the same trajectory, so it's not Connecticut and Long Island Sound driving this.

MR. HASBROUCK: Okay thank you, and my follow up then is in terms of possible management measures. If we're seeing this decline in abundance that you're showing right now, and in terms of changing ecological conditions. You mentioned a few minutes ago a possible moratorium. Is there any indication that reducing fishing effort by some amount, even including a moratorium, is going to change that trend in abundance? You know are the environmental conditions such that no matter what we do we may not gain anything?

CHAIR McKIERNAN: Kim, do you want to take that or call it a rhetorical question?

MS. McKOWN: I can say I was just thinking this assessment. I don't remember if we did this, but I know we looked from the last assessment. We feel natural mortality has increased in southern New England, but fishing mortality was still higher than natural mortality, and that's something I guess we should look again at

this assessment. But I know from the last one. Yes, it would help to reduce fishing mortality.

CHAIR McKIERNAN: Jason McNamee.

DR. McNAMEE: I'm going to send this one to Mike, to give Kim a break. I think either of them could probably answer. The statement was made a couple of times during the presentations, it's also in the peer review that the trends are less uncertain than the scale. I agree, certainly with the sentiment.

What I was wondering is what I didn't see, my review is evidence that there is a scale issue with the assessment. My first question is, have you found a scaling issue, like when you rerun the model you get a change in the scale of the population that you can't quite explain, and if the answer to that is yes, my follow up is, are the reference points that are proposed robust to that scaling issue?

MR. CELESTINO: Thanks for that question, Jay. I don't know if, Maya are you able to put up Slide 8 from my presentation? Yes, that's the one. Perfect, thank you. Those two plots at the bottom are the trajectories and trends of all the model runs. The darkest line is the base case scenario, and all the sort of thin gray lines are the variety of different sensitivity runs.

The Gulf of Maine on the left and southern New England on the right. I think the thing that jumped out, at least from the Review Panel's perspective is that reassuring that with respect to the Gulf of Maine, all the transfers start at low abundance and trend upwards. Ditto with the southern New England there is this sort of parabolically unimodal shape.

But there does seem to be enough wiggle room amongst the different runs that it gives a bit of caution, in terms of relying on any one individual run. But the reassuring thing also on the Review Panel perspective, with respect to determining stock status and utilization of reference points is that the percentile system puts everything on a relative scale. Even if the absolute values change, we had a good bit of confidence that the ultimate conclusions regarding stock status would not, because we start using this percentile system. Does that help?

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DR. McNAMEE: That's perfect, Mike, thank you very much.

CHAIR MCKIERNAN: Toni, are there any others?

MS. KERNS: No other hands, Dan.

CHAIR MCKIERNAN: All right, thank you. Well, why don't we take a motion? I think David Borden had proposed a motion to accept the stock assessment and the peer review. David, do you have a motion?

MR. BORDEN: Yes, sir. Move to accept the American Lobster 2020 Benchmark Stock Assessment and Peer Review for management use.

MS. KERNS: You have Pat Keliher as your seconder. Dan, did we lose you?

CHAIR MCKIERNAN: Okay, yes. At this time. I'm sorry, I must have muted. We got the Peer Review and the Assessment approved, right? Did that record?

MS. KERNS: We didn't hear you, if you were asking.

CHAIR MCKIERNAN: Yes, all right. I was muted. If there are no objections to that motion, and I assume there is not. **Then, the motion by David Borden to accept the peer review and the assessment is passed by unanimous consent.** Thank you.

MS. KERNS: No hands.

CONSIDER MANAGEMENT RESPONSE TO THE ASSESSMENT AND PEER REVIEW

CHAIR MCKIERNAN: Now at this time on the agenda is a possible discussion about management response. As one of the states with southern New England fisheries, I would like to recommend we postpone that until February. Personally, I would like to take a fresh look at fishery performance, you know

take stock of the actions that this Board and each of our states have taken, in terms of regulating the fishery before we tackle that. Is there any objection to not taking this discussion up at this time, but taking it up in February?

MS. KERNS: You have Pat Keliher, then Jason McNamee and Tom Fote.

CHAIR MCKIERNAN: Okay, you said Pat Keliher first? Okay, Pat.

MR. PATRICK C. KELIHER: I don't have any objections to that at all. I do want to bring attention to a recommendation within the assessment as well as by the PRT around engaging the Economic and Social Science Committee, in regards to some possible reviews of different types of triggers associated with the lobster fishery. I should be better prepared to have something a little more specific than that.

But if you all are thinking around reengaging on this issue this winter on southern New England, maybe I could do some additional work on what that might look like, and bring something forward at the next meeting. I think this kind of fits right in to the resiliency addendum that we have continued to delay, because of right whales. I think that Addendum needs to start moving forward, and I think we need to include some additional thinking around economics and social science side of that work.

CHAIR MCKIERNAN: Yes, I did not mean to dismiss the items that were brought up in the recommendations of the assessment or the peer review about the Gulf of Maine/Georges Bank stock, so I appreciate that. We can take both up at the February meeting. Next is Jason.

DR. McNAMEE: I also am in general agreement of deferring the majority of this discussion until the next Board meeting, with one exception, and that is at least. What I would like to do is make a motion about the reference points, and the reason I think that is important is that we get at least, even if we defer our action on it, if we get a motion on the table for reference points, I think it will help with some of that subsequent discussion to kind of know what we're

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aiming at. If you feel it's appropriate, I have a motion ready to go.

MS. KERNS: Dan, we're not hearing you.

CHAIR McKIERNAN: I have one more hand up, Jason that would be Tom Fote. Can I come back to you after Tom?

DR. McNAMEE: Absolutely.

CHAIR McKIERNAN: Okay. Tom, go ahead.

MR. THOMAS P. FOTE: Yes, I'm thinking about so far today we did winter flounder and now we're doing lobster. Winter flounder; we basically in the southern New England part of that stock we basically did extreme measures. We basically put almost a moratorium in place, as far as the recreational one fish, and we put a short season in.

Then we also put a small in-state catch in. I'm sitting here 10 years later and it really has had no results, because there are only certain things you can effect on that. I look at the same thing we've done on our weakfish, and I look at what we basically say we could basically rebuild. The question when we did bluefish last week, actually and I asked the same question.

You're giving me tables that project that this is what will happen if we do such and such. How confident are you in the tables when you basically admit that it doesn't depend on this, it depends on things that we don't control? I'm happy to postpone it to February, because we've been down this road many times before in the last 10 years.

But my concern is, we can't change the weather. We can't change climate. I also thought in the discussion today as we were going through this, that the presentation we had at the Maine annual meeting, which I found very enlightening, which I had never thought about before, is that when we basically lose a

fishery in an area that the whole ecology of that area changes.

It might not support, it might take years to bring this back, because of the prey/predator relationship, or what replaced that when those species were no longer there. I don't know if anybody is looking at that. But that is my concerns when we start doing things like this. I've watched this. I also have surf clams that have moved offshore and further north. How important was the surf clam fishery for in-state waters in New Jersey? It is no longer in existence. I don't care what we're going to do about it, we're not bringing it back until the water cools off. I've just got my concerns there, I just wanted to express it. I didn't want to comment, and I thought there was no plan to winter flounder to bring this whole discussion up, because I just shake my head and cry over the facts. Sorry about that.

CHAIR McKIERNAN: Yes, I agree, Tom. It is pretty depressing when you look at the number of stocks at the southern end of the range that appear to be failing. Jason, I think your motion is ready to be brought up at this time.

DR. McNAMEE: I'll read the motion in, and then if I get a second, I have a little bit of rationale. The motion is to move to adopt the following reference points as recommended in the 2020 Benchmark Assessment for the Gulf of Maine/Georges Bank stock, abundance reference points for the fishery industry target, the abundance limit and the abundance threshold to be 212 million lobsters, 125 million lobsters, and 89 million lobsters respectively.

Then exploitation reference points for the same area, the exploitation threshold, and exploitation target to be the 75th and 25th percentiles annual exploitation estimates during the current abundance regime.

Then for the southern New England stock, an abundance threshold for the southern New England stock, which is set at 20 million lobsters and exploitation reference points to be the exploitation threshold, and exploitation target set at the 75th and 25th percentiles of annual exploitation estimates during the current abundance regime. These are

consistent with the recommendation from the Stock Assessment Subcommittee and approved by the Peer Review Panel.

CHAIR McKIERNAN: Jay, do you feel that you need to make this motion because the acceptance of the stock assessment doesn't accomplish that?

MS. KERNS: Dan, acceptance of the stock assessment does not accept the new reference points. The Board needs to do that explicitly through.

CHAIR McKIERNAN: All right, well then thank you, Jason. Can we get a second on Jason's motion?

MS. KERNS: You have Ray Kane.

CHAIR McKIERNAN: Thank you, Raymond. Any discussion on the motion?

MS. KERNS: Dan, you had Colleen, and then Cheri, then Pat Keliher and David Borden.

CHAIR McKIERNAN: Colleen, you're up.

MS. BOUFFARD: My hand was raised from before Jay made the motion. I don't have any issue with the reference points. I think they make good sense moving forward. Do you want me to hold off on my comment until after this is discussed?

CHAIR McKIERNAN: You're in favor of the motion as written?

MS. BOUFFARD: Sure, I just had discussion about postponing the management talks until February. I don't know if you want me to hold off on that.

CHAIR McKIERNAN: Yes, why don't you hold off on that and we'll try to get this motion approved. Cheri Patterson.

MS. CHERI PATTERSON: I am fine with this motion. My hand was raised to second it, thanks.

CHAIR McKIERNAN: Pat Keliher.

MR. KELIHER: I think I'm fine with this motion. I just wanted to make sure, and Jay can just verify this for me. These are all the points that were consistent within the document, correct? There are no changes.

DR. McNAMEE: Yes, thanks, Pat and that is correct.

MR. KELIHER: Great, thank you.

CHAIR McKIERNAN: David Borden.

MR. BORDEN: Yes, thank you, Mr. Chair. Would somebody on the staff remind me? We have a fishery industry target abundance limit developed for Maine, but we don't have one or any kind of recommendation for southern New England. Is there a reason for that?

MS. STARKS: This is Caitlin. I can take a first stab, and then if Kim has anything to add she can. But my understanding is that the SAS only put forward the one abundance reference point for southern New England, because of where the stock is in comparison to that. They didn't feel it was really appropriate to put forward any other targets at this time. Kim, if you have anything to add to that.

MS. McKOWN: No, that's correct.

CHAIR McKIERNAN: Toni, any other hands up?

MS. KERNS: Jason's hand is still up. I'm not sure if that was on purpose or not.

DR. McNAMEE: It's on purpose.

CHAIR McKIERNAN: Okay, go ahead, Jason.

DR. McNAMEE: I was just going to offer a little bit of rationale, and I'll try to be quick. First, thanks to Ray for the second, I appreciate that. Just a little bit of rationale. As Toni noted, it seemed appropriate to get the reference point discussion explicitly on the table. I wanted to make sure we did that. Also, I had asked a

couple of questions during these presentations, and so I understand that SPR and MSY reference points have been tried in the past, but they basically don't seem to produce defensible management targets or thresholds. I think we should continue to look, to try to link these reference points back with the biology specifically. But in the meantime, I really appreciated the change point analysis and the work done by the Stock Assessment Subcommittee, as well as the points made by the Peer Review Panel.

Bringing in this change point analysis or the regime analysis, as it's talked about in the presentation. Having that done to get at the notion that the productivity has changed in each of these stock areas, I think is really important. I think it is much more reflective of the productivity. They seem like much more reasonable targets. Therefore, I support the reference points created by the Stock Assessment Committee, and supported by the Peer Review Panel. I hope that there is support for this motion.

CHAIR MCKIERNAN: All right, thank you, Jason. We've had four comments in favor. Is there anyone on the Board who would like to speak against this motion, as a way to telegraph that there might be some opposition?

MS. KERNS: I don't see any hands, Dan.

CHAIR MCKIERNAN: All right, is there anyone opposed then? Is there anyone opposed on the Board to this motion? Seeing none, it is adopted by unanimous consent. Toni, before we start the next section of the meeting, shall we take a five-minute break?

MS. KERNS: Dan, I didn't know if you had deferred Colleen to after this was discussed. I didn't know if you needed to go back to Colleen or not.

CHAIR MCKIERNAN: Certainly. Colleen, why don't we come back to you at this time? Thank you, Toni.

MS. BOUFFARD: I just wanted to get back to the discussion about postponing management talks until February. I'm certainly for that. I'm just kind of hung up on that bullet that I saw where there were projections done that removed fishing mortality for southern New England, and I think it would help to inform the discussions that we're going to have in February, and get back to the point that Tom and Emerson made.

When we start throwing words like moratorium into the arena, it would be great to have some kind of information that there would be some assurances that reducing fishing mortality further would be successful in helping the southern New England stock. I know Kim had mentioned that fishing mortality rate is currently higher than natural mortality.

I'm not sure if there can be projections or runs done to help again inform that discussion about what happens to stock abundance if fishing levels are reduced to the levels that natural mortality is at. I'm not sure if it is appropriate to task the Technical Committee to do those projections, if they haven't already been done.

CHAIR MCKIERNAN: Kim, can you help us with that?

MS. MCKOWN: We did one run, and I was going to find it, probably in this break, and e-mail it to Colleen so that she can see it.

CHAIR MCKIERNAN: All right. Okay, well thank you Colleen. At this time, I would like to propose a five-minute break, and that would allow us to resume at 3:15, and get a report on data collection requirements.

MS. STARKS: Dan, this is Caitlin. I'm totally fine with taking a break now. I just have one question for the Board or clarification on that last bullet on this slide. We can take it up when we come back, if you prefer.

CHAIR MCKIERNAN: Certainly, why don't we come back? We'll take that up first, and then we'll go to

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Data Collection Requirements. We will resume at 3:15.

(Whereupon a recess was taken)

CHAIR MCKIERNAN: All right Lobster Board. Caitlin, I think we can resume.

MS. STARKS: I just wanted to get some clarification or guidance from the Board on the last bullet on this slide about Addendum XXVII, which was related to resilience in the Gulf of Maine and Georges Bank. If discussions on management response are going to be held off until February, I would like to just clarify whether I should work on this Addendum at all before then, or wait until after those discussions occur in February.

CHAIR MCKIERNAN: Yes, that is a good question. Board members, would you like to weigh in?

MS. KERNS: I don't have any hands raised, Dan.

CHAIR MCKIERNAN: Okay, in my recommendation to postpone the discussion until February, I was extra focused on the recommendation coming out of the stock assessment that Gulf of Maine/Georges Bank, they weren't recommending management actions. In southern New England they were. But Caitlin, you bring up a valid point that we do have the postponed resiliency addendum, and certainly that can slide forward on its own. I think we've heard some rational reasons today why that should. Is there anyone who would like to weigh in on that?

MS. KERNS: Pat Keliher.

CHAIR MCKIERNAN: Pat.

MR. KELIHER: Yes, as the maker of that resiliency motion to initiate an addendum, I certainly don't want to lose sight of that. You know I think Dave Borden kind of teed it up for me a little bit here this morning, talking about

the timeframe of which the collapse in southern New England happened, before the Board even finalized any management actions. I certainly don't want to be delaying too long here, but again just to danger repeating myself, but I want to make sure that we are thinking about other potential economic triggers, and that is why I brought up the issue of engagement of the Economic and Social Science Committee.

CHAIR MCKIERNAN: David Borden.

MR. BORDEN: I am supportive, as Pat just indicated, moving forward with the resiliency addendum. In support of that I would just simply note, state the obvious, that if we start an addendum today and it takes us two or three years to finish that addendum, which it usually does. Then we adopt it, and then it takes another two or three years for NOAA to do about federal waters. It's a long period of time.

If you factor in the point that I made about southern New England, I think there is some urgency here to deal with some of the issues that the Board attempted to deal with before. In terms of the southern New England issue, I think there is going to be a whole discussion that is going to kind of focus on the points that Emerson raised about what you can do, what's effective, and that Tom Fote also raised about what you can do for southern New England.

It doesn't mean you don't take any action in southern New England, but there may be quite a range of management measures we need to look at and examine. All of that is going to take time. I ask people to kind of factor that into their (word garbled) between now and February, and then come prepared to deal with those process delays that we know are going to invariably take place.

Make suggestions so that we can kind of coalesce around some kind of position for the Gulf of Maine and also a position for southern New England. The other big advantage is this will give the industry in southern New England an opportunity to get their own dialogue going on the issue.

CHAIR MCKIERNAN: Can I ask a point of clarification from Caitlin or Toni? Addendum XXVII, was it officially

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tabled? I remember that we had the meetings to deal with some of the specifics, but at that point the Large Whale Take Reduction Plan became quite an occupying issue for many of our staff, so we put it on the shelf. Can you remind the Board where that Addendum is, and if we need to resume progress on it with a vote?

MS. STARKS: I don't think we need a vote. You're correct that it was basically just stalled or postponed. There was a draft document that the PDT had drafted, but it did not get presented to the Board, and the focus at the time was really on standardizing measures between the different LCMAs in Gulf of Maine and Georges Bank, and addressing some different issues related to those.

Based on what's coming out of the stock assessment and this discussion, I think there might be an interest in expanding the things that this Addendum could address. I think we would need just agreement from the Board to move forward, have the PDT kind of discuss what has already been drafted, and potential areas for adding some other considerations like socioeconomic analysis and things like that.

CHAIR McKIERNAN: To David Borden and Pat Keliher, is that what you had in mind at this point, just getting consensus that Addendum XXVII should be resumed, and the PDT reconvened?

MR. KELIHER: Yes, I was still thinking, based on your earlier comments around southern New England that we would kind of reengage this conversation. But David Borden's comments on urgency is certainly not lost on me. I'm reluctant to say we should have a formal subcommittee maybe start working on this.

Looking at these issues, maybe both of the issues, both the resiliency addendum as well as southern New England. But at the very least, maybe informally Commissioners can interact between now and the February meeting, so

we're coming to the table ready for a full discussion on both of these issues.

CHAIR McKIERNAN: That's well put, Pat.

MR. KELIHER: Then we can reengage the PDT.

CHAIR McKIERNAN: Okay. Is there any objection to that as a strategy?

MS. KERNS: Dan, you have Tom Fote and Cheri Patterson with their hands up. They were up before you asked.

CHAIR McKIERNAN: Tom, go ahead.

MR. FOTE: I was just thinking about what the implications are a moratorium. When you shut it down in a state like New Jersey that only have, we've lost a lot of the permits that we had in the '90s, and we're down to a small number. When you put a moratorium, when we start losing the areas where we can even come back, even if the stocks ever came back. That is my concern when I'm looking at that. I think we do need the economics of it, and the impacts that it will have on the total community. Yes, I'm willing to go along with what you guys are proposing.

CHAIR McKIERNAN: Cheri.

MS. PATTERSON: Yes, I am definitely in favor of this. I also just wanted to mention that once we get to the approving the fishery management plan review and such. It's actually the PRT is recommending that the Board engage CESS to consider socioeconomic data and such, so he's coming at it from two different directions.

CHAIR McKIERNAN: Consistent with Pat Keliher's comments, I would ask all the Board members to be prepared to come to the February meeting, having discussed with their staff and their industry and with one another, strategies for getting traction on Addendum XXVII, and dealing with the southern New England challenge as well. I think I would like to move on at this point, unless someone has a burning desire to keep discussing this. All right, let's move on to the report on data collection requirements.

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MS. KERNS: Dan, Jason's hand went up.

CHAIR MCKIERNAN: Sorry Jason, go ahead.

DR. McNAMEE: No, I'm sorry, Mr. Chair. It's not related to Addendum XXVII; it's going back to the comments that Colleen made earlier. I like the comment that she made, but I started thinking about there was, so we're going to look at the results of some projections that look at a moratorium.

I just wonder what the context is for those. I'm wondering if we need to provide a little more guidance. For instance, you know look at a moratorium versus a v-notching program or a moratorium versus a change to minimum size. I think if this work is going to occur between now and February, the team is going to need a little bit more guidance. I'll just offer those two off the top of my head. But they may wish to come up with some other potential management strategies with which to compare the moratorium to.

CHAIR MCKIERNAN: Certainly. Caitlin. I need a lifeline on this one, so what is the preferred strategy here, something more formal, in terms of convening, or formally meeting with either the Stock Assessment Committee? How do we fast track this, Jay, if that is what you're suggesting?

MS. KERNS: Can I ask a question about this, Dan?

CHAIR MCKIERNAN: Yes, go ahead.

MS. KERNS: Sorry to butt in on Caitlin, but I thought Colleen was just asking for the projection of southern New England with 611 in, and with 611 out, and that Kim, I thought they had run that and she was looking for it to send it to Colleen. If they hadn't done that then, I said over the break that I could work with the Assessment Team to provide the answer to the question she was looking for. I'm not sure we would want to start without

specific instructions to the TC to run different management measures yet. Now you have Colleen and David Borden.

CHAIR MCKIERNAN: Colleen.

MS. BOUFFARD: Toni, just to clarify. I wasn't looking for projections with Long Island Sound removed. I was looking for projections with fishing mortality removed. Then I had made the suggestion based off a comment Kim had, to request the runs that could be done if F was reduced to the level of M. Again, I was just looking for some kind of information that we could review prior to the February meeting, to have some reassurances that any management measures would have positive results on stock size.

MS. KERNS: You have Kim to respond and then David.

CHAIR MCKIERNAN: Go ahead, Kim.

MS. MCKOWN: I just wanted to let you know, I did send Colleen those runs that show the response of the population if you remove F, and abundance does increase even in those runs that are trends and recruitment trends runs.

CHAIR MCKIERNAN: Could the whole Board get copied on those as well? That would be useful.

MS. MCKOWN: Sure, I'll send it to Caitlin and she can send that out.

CHAIR MCKIERNAN: All right David Borden, you're going to be the last one on this issue.

MR. BORDEN: I'll make it quick. I just encourage everybody to discuss southern New England in the context of the prior discussions we've had, when some of the scientific members recommended a moratorium. You had a fairly extensive discussions about how you enforce this, particularly in areas like Massachusetts, it has borders on four, I think, LMAs.

Then you've got the whole issue of, it's really a mixed crustacean fishery at this point, where a lot of the participants, they are earning the bulk of their income from Jonah crab fishing, not lobster fishing. Now we

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have to have the other consideration of, how do you enforce?

Lobsters are very easy to transport, and the enforcement community is concerned about at-sea enforcement, which we all know is not terribly elaborate. We need a broader discussion on this whole issue of what we can do, what's going to have a positive impact. But it shouldn't all focus on a moratorium. I'll predict if we do that, we'll waste a lot of time on the subject.

CHAIR McKIERNAN: I think it's a good idea to dust off some of that old script that we did struggle with five and ten years ago. Thank you everyone.

REPORT ON THE DATA COLLECTION REQUIREMENTS FOR 2021

CHAIR McKIERNAN: I'm going to move on to the next item on the agenda, which is the Report on the Data Collection Requirements. Is Anna Webb presenting?

MS. KERNS: I'm actually going to do it, Dan.

CHAIR McKIERNAN: Okay Toni, thank you.

MS. KERNS: Anna and Renee as my backup for when I need help. We're going to move on to the next slide, Maya, please. As everyone knows, Addendum XXVI put in place new requirements for lobster and Jonah crab reporting. Not only did it add new data elements, but it also moved the fishery to 100 percent harvester reporting by 2024.

There were some new data elements that were added that were supposed to be implemented two years ago, but we determined that some of those measures were not able to be collected, either through the paper or more notably the electronic reporting systems. While reporting systems were advanced, we delayed the implementation of those elements.

All of those data elements are going to be ready for collection from both state and federal only lobster permit holders in January of 2021. The federal lobster permit holders, some of those data elements are not collected directly, they may be calculated or estimated. It is important to understand that there is a distinction in how data elements are gathered, and a data element can be either collected directly, so a specific question looking for an answer. You can also calculate a data element by using the responses from two directly collected data elements, to come up with the value, or it can be estimated.

An element is estimated when you use an element that is collected with an assumption around that element, in order to come up with the value. We have found, through a group of wonderful folks from all the states and GARFO and ACCSP that have been working very diligently over the last year and a half, to make sure that everything is ready for 2021.

That there are some inconsistencies between the states as well as NOAA fisheries, and there are five specific data elements that we are requesting consistency from NOAA Fisheries for the VTR, in how they are gathering the data for these five elements. I'm going to go through each one and the specifics around it.

For the first data element, it's the number of trap hauls in an effort. An effort is a statistical reporting area. This piece of information is really important for the stock assessment, it is an effort metric in the assessment. We want to make sure that this element is being collected by all of the partners in the same way, so when it's put into the assessment, we don't have any additional uncertainties around specific indexes from one jurisdiction versus another.

Currently GARFO calculates this value from two different data elements, the first being the number of strings hauled by SRA, and then the average number of pots per string hauled by SRA. The average number of pots per string is the same as traps per trawl hauled in an effort, which is Number 3.

As I said before, we directly collect this value, and we really would like NOAA to directly collect this value as

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well. We are not telling them that they can't ask those other, you know the two questions that they are currently using to calculate the value, but we're just wanting them to ask an additional question, in order to get this value directly.

The second element is the number of traps in the water for the statistical reporting area. This value is important for knowing information for Atlantic Large Whale discussions. We're asking GARFO to directly collect this value. In particular the Large Whale discussions, it is important to determine the number of end lines.

It is very important for those fishermen that are fishing in multiple areas. GARFO currently estimates this value, and the states ask for the total number of traps in an effort at the beginning of each trip, so we are asking GARFO to do the same for the state share. As I said earlier, GARFO currently already asks for traps per trawl hauled in an effort.

If they decide to change the questions, because we've asked them to directly calculate Number 1, and they no longer ask this question anymore, then they would need to just calculate it just like the states. It looks like somebody is not muted, if staff could mute them, great. Number 4, the number of buoy lines in an effort. We're asking GARFO to directly collect this. They currently estimate it, and the states directly collect it. It's also very important in the determination of the number of end lines in the fishery. The last element is the number of buoy lines in the water. We're asking GARFO to directly collect this data element. Right now, it's partially estimated, partially calculated from the average number of pots per string hauled, and total gear in the water.

NOAA assumes that the average number of pots and strings hauled per effort is the same for all kinds of gear, so they take an average across the year across all areas. We know that when

you fish in multiple areas that that average is not always the same across the board for all fishermen, sometimes they move their pots, and move the number of pots that are being hauled.

It's really important to have this value for determining the end lines in the fishery for Atlantic Large Whale discussion. We are making a recommendation to the Board that a letter is sent to GARFO to request changes for how the data is gathered from these five data sources. I will take any questions.

CHAIR McKIERNAN: I was remiss in not doing a better job introducing this topic, but you know we've worked very hard at the state level, trying to interface with NMFS and their data collection. I want to say that the working group that has been meeting on this weekly has done a great job.

Especially Julie, who is the model of patience and diplomacy, to try to get this done. This is so important for issues of Right Whale conservation, and also for offshore wind development. The lobster fishery really needs to do what it can to better define the footprint and the times and places that fishing is occurring, more than ever.

Toni, we're looking for Board feedback on a letter being drafted to GARFO, with request for these five parameters to be collected in a way that is consistent with the traditional way the states have done it, or in a compatible way, so that we can all collect it together in a more uniform manner. Are there any questions on this issue to Toni from the Board?

MS. KERNS: You've got David Borden.

CHAIR McKIERNAN: David Borden.

MR. BORDEN: Thank you, Mr. Chair, are you ready for a motion?

CHAIR McKIERNAN: Well, are there any questions before we take the motion? Then sure, I'll take the motion.

MS. KERNS: Dan, really quick, Ali Murphy has her hand up.

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CHAIR MCKIERNAN: Okay, go ahead.

MS. ALISON MURPHY: I too wanted to thank the participants of the weekly data calls. As you said, there is a lot of value in this work, and there is a lot of value in having all of the jurisdictions kind of gain a better understanding of what's being collected and how, and by the different groups. The timing of this discussion before the Board is good. We are working on including the additional data elements that were included in Addendum XXVI in our ongoing rulemaking that will also propose mandatory harvester reporting, as well as the Area 2 and 3 ownership caps and the Area 3 active trap cap reduction. I wanted to see, Mr. Chairman, if you would be okay with perhaps kicking this over to some of my colleagues in our data group, to see if they have any additional comments or perspective that they can offer.

CHAIR MCKIERNAN: Certainly. Are they a part of the call today?

MS. MURPHY: Yes, I believe Dave Gouveia and Barry Clifford and Jay Hermsen are all on. I don't know if any of them want to take a minute to respond to some of these (broken up)...requests.

CHAIR MCKIERNAN: Why don't I recognize David first? David Gouveia.

MS. KERNS: David, if you could raise your hand it would make it much easier for me.

MS. TINA L. BERGER: He's unmuted now.

CHAIR MCKIERNAN: David Gouveia, go ahead.

MR. DAVID GOUVEIA: I just wanted to echo the comments Ali had made. We're not opposed to any of the changes that are suggested or additions, I should say, that are suggested that Toni had provided. We would definitely consider those. It would be under the auspices

of eVTRs, we certainly could make any changes to the paper collections that we do.

If we were to consider adding those additional questions that were outlined by Toni, we wouldn't be replacing existing questions we would ask, it would just be to complement the questions that we already ask. Short of that, I think that whatever folks decide they want to send forward to us formally in a letter, we'll definitely put that forward and try and do the best we can with that.

CHAIR MCKIERNAN: Thank you, David. David, Ali mentioned two of your colleagues. Would you like them to speak on this issue, or do you think you've got it covered?

MR. GOUVEIA: I think we've pretty much got it covered, but if there are some questions that are posed to us, we would be happy to help answer those.

CHAIR MCKIERNAN: Okay, are there any questions from the Board on this issue? I guess not, all right. Toni, that letter will be drafted for Bob's signature?

MS. KERNS: It needs to be a recommendation to the Policy Board to send the letter, Dan, this is just for clarification purposes. As long as there are no objections from the Board, then we can have that letter discussed at the Policy Board, and it could be either under your signature or Bob's.

CHAIR MCKIERNAN: All right, so that letter would be drafted in time for this week's Policy Board meeting?

MS. KERNS: Probably not in time for the Policy Board meeting, but just the concept. The Policy Board can decide whether or not Pat and Bob and you can use your discretion to send it to NOAA pending any edits.

CHAIR MCKIERNAN: I'm not hearing any objection to us drafting that letter in concept, so we'll move forward with that. Thank you, Toni, thank you Dave Gouveia.

**REPORT ON ELECTRONIC TRACKING
PILOT PROGRAM**

CHAIR MCKIERNAN: And we'll move on to the next item, which is a Report on Electronic Tracking Pilot Program. I'll kick it back to you, Caitlin.

MS. STARKS: Bill DeVoe is going to be giving the presentation on this, and Maya, could you pull that up, please? Bill, you are free to take it away.

MR. BILL DeVOE: Good afternoon, this is Bill DeVoe, Marine Resource Scientist to the Maine Department of Marine Resources, and Story Reed and I were the primary investigators on this Electronic Pilot Program just over the last year or so. I think Story is on the line as well for questions after. Proper save of the presentation.

The Pilot Project was initiated under the adoption of Addendum XXVI. It established a one-year pilot electronic tracking program. The beginning of this was established under the Lobster Electronic Tracking Subcommittee. The Subcommittee determined that we should test multiple tracking devices, and a variety of geographical environments from southern New England all the way up to the Gulf of Maine, specifically targeting federal lobster vessels.

When this Subcommittee was first convened, we invited various tracker companies to present their product to the Subcommittee, then identified four trackers to test out. Then after we had procured some of these trackers, we identified volunteer industry participants. We ended up testing three different devices.

We tested out trackers from Succorfish, Rock7, and Pelagic Data Systems. We tried eight of each of these devices in both Maine and then Massachusetts, so four devices per state. The trackers used both cellular and satellite networks. All of them used cellular, the Rock7s

also had satellite. The Succorfish offered a satellite option, but we did not test that.

The goal was to have a one-minute ping rate. We didn't specifically attempt to get the one-minute ping rate only while the vessel was hauling. For most of these we just had them go at once a minute through the entire time the tracker was powered on. The first Rock7 devices were deployed in Maine in June of 2019, and the last devices were pulled around May, 2020. There are still a few Succorfishes that are going in May.

For results, you know the point of this project was to simply test out different tracking devices and see how they perform. Then we found that pretty much all the ones that we tested performed satisfactorily. They delivered the vessel position as expected. You know the exception to this, the Pelagic Data Systems tracking devices were solar powered, which seemed like a really great option. Massachusetts had some better results with theirs, but in Maine we had a really hard time in the winter getting enough sun to even hit the trackers it found did not turn on. Maine Marine Patrol had also done some experiments with that device in the past with similar results. The cellular-based systems are definitely considerably cheaper than satellite and permit faster ping rates, because the data is so much cheaper.

Most of the devices that were on cellular networks, they uploaded as soon as the vessel returned within cell coverage, which depended on where in the Gulf of Maine you are. I was anywhere from three to as much as ten miles out. The greatest cause of failure for the devices was loss of power from the vessel to the device, so literally they have to be plugged in to work. No surprise there.

There are various methods for using the power tracking devices, some of them were hardwired right into the vessels, such that there was pretty much always power being applied from the vessel battery. Some of them were plugged into auxiliary outlets, with just a 12-volt adapter. In actual use there would probably need to be some legal requirements on how the device were powered. The method of power seemed to be the biggest predictor of device failure.

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Some of the devices did have some better features, in terms of integration interface. Add-on hardware, we tested out some Bluetooth outlying beacons in Maine with the Succorfish devices. But at the end of the day, they all pretty much did what they were supposed to do, which was report a position every minute for the vessel.

I started to mention we were shooting for a one-minute ping rate. The reason for that one-minute ping rate is that typically between a one and two-minute ping rate, you can programmatically detect trawls as small as triples. In these two examples here, you know, this shows the map on the left is ten-trap trawls, the map on the right is triples.

In both cases these red polygons are the location of individual efforts, as detected by a hierarchal cluster algorithm. The orange dots over these are the actual GPS positions from a DMR observer on board. This has been really important to be able to automatically detect these trawl positions for quantifying the effort of the finer spatial scale, as well as potentially reducing harvester reporting requirements.

There are more details on this in the ASMFCs final report on this project. Recommendations and future work. As I mentioned, the one-minute ping rate was found to be essential. Faster ping rates than this are not really necessary. Multiple vendors could meet the requirements for higher ping rate VMS in the lobster fishery.

The minimum data that you get out of these devices, the vessel identifier, the timestamp, and the latitude and the longitude. A lot of these devices offer additional data elements, and they're mostly plots that you can calculate. It's conceivable that multiple vendors could feed these same four data elements into a common system.

Installation of these devices on many vessels will definitely require a significant amount of

staff technicians. There are times when they stop working, you need to follow up with the fishermen. Additionally, if you're talking about putting 1200 of these devices on federal lobster vessels, that is a significant amount of work, just for the initial deployment. Significant data integration work remains. You know the tracking data on its own is not nearly as useful unless it is linked to a harvester report that has information about how much is caught, about how many trawls were hauled, data elements that are then being discussed.

It's possible further hardware testing, hauler sensors, environmental sensors. There are also some efforts at DMR to develop their harvester at vessel for length with some of these vessel tracking provider systems. DMR has recently received funding for an extended pilot project with up to 20 trackers integrating with harvester reporting. I also have results of a second project that was funded by ASMFC between Mass DMF and Rhode Island Innovative Trackers eTRIPS Mobile. I'll open up for questions.

CHAIR MCKIERNAN: Toni, any hands up?

MS. KERNS: Not yet, Dan.

CHAIR MCKIERNAN: I have one question, and it had to do with data storage. Is this going to be a challenge, kind of an unmet burden to maintain large amounts of data on some systems?

MR. DeVOE: Yes, that is a great question. When DMR is having conversations with odd looking data that provides our harvester app, we had done some back of the envelope calculations, and said you know okay, if we had every federal vessel producing one-minute pings with those elements I described. How much would that actually produce?

The lowest number that we came up with, if you were just storing, you know the device ID, the timestamp or the position was 3 gigabytes a year, which is nothing. We rounded it up. In conversations with the software developers at Bluefin. We said let's just call it 50 gigs, and I think that they had thrown out a figure that was, it was absurd. It was something like \$5.00 a month for storage. It was nothing at all. That was using what

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the sort of maximum possible, if you had all sorts of other data elements you know, things like calculated vessel speed, effort number, et cetera.

CHAIR McKIERNAN: Thanks, are there any other questions Toni, from the Board?

MS. KERNS: Tim Donovan has his hand up, Dan.

CHAIR McKIERNAN: Tim Donovan? Okay.

MR. TIM DONOVAN: Good afternoon folks, Tim Donovan, NOAA Office of Law Enforcement. Nice report, Bill. One of the things, as far as enforcement is concerned is the tamper proofing of these types of units to be used for any type of litigation. Did the vendors give you any information on something that we probably want General Counsel to review at one point, if this goes any further?

MR. DeVOE: Yes, that is a great question, thank you. I think I only talked about this once in the presentation, but we worked with Maine Marine Patrol on some of these tracking devices, and got some of their feedback. I would definitely welcome and encourage any feedback from OLE. Yes, so a few of the devices do have some antitamper type hardware. The Succorfish device that we tested had a wire loop that ran through the wiring harness, so that if anybody unplugged or cut the cable to the tracker, it would trigger an event.

Additionally, as far as security, all the ones that we tested out were fully encrypted. This is something that has definitely been considered by the companies that are producing these. Something I would throw out too, for the consideration of the Board, you know from the Office of Law Enforcement. You know there would be further discussion on how important real-time data is.

In my personal discussions with our Marine Patrol Officers that were involved in this, they seemed to think that the lower cost of cellular

data more than made up for any loss in real-time capability. Similar to the scientific end of this were more interested in viewing vessel tracks after the fact instead of real time. That is something to consider during discussions regarding real-time satellite VMS versus cellular.

CHAIR McKIERNAN: Toni, are there any other questions from the Board?

MISS KERNS: I don't see any hands up, Dan.

CHAIR McKIERNAN: My question is, what are the next milestones? You had mentioned that there is a southern New England version of this that is trying to link up to eTRIPS. Do you want to speak to what is going to come in the next chapter of the development of this technology?

MR. DeVOE: I can't speak to the southern New England project, although Story might know something about that if he's on the line. But as far as DMR, we're working on integrating the harvester app that is being developed called VESL. We had some of the data interfaces to these tracking providers, starting out with Succorfish, but possibly including other tracking providers.

In the expanded pilot project that we're hoping to do, we would test anywhere between 20 and 25 tracking devices. But in addition to just deploying these on federal lobster vessels, it would also have the captains of the vessels reporting via vessel to fulfill their harvester reporting requirements with tracking data linked up.

CHAIR McKIERNAN: Yes great, and I think that was one of the original visions that Pat Keliher of Maine brought forward a few years ago, when we were talking about requiring 100 percent harvester reporting. Pat's vision of the model he was trying to develop was, with trackers it would become easier to generate the record and that particular part of the report wouldn't have to be entered, it would be captured by the device.

I look forward to more developments in this, especially as it relates to the potential and ongoing offshore wind development. The offshore wind

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development that could very well take place in the Gulf of Maine is going to desperately need good data on where and when lobstermen fish, and it is so critical to shore up that missing information, when so many other gear types have VMS and have a much stronger position, in terms of defining where they fish. The lobster fishery, which is the most valuable fishery in the Gulf of Maine, the data is so lacking. Nice job on this, and I really look forward to more progress. Thanks for this report.

MS. KERNS: Dan, David Borden has his hand up.

MR. BORDEN: I'll make it quick. We've gone through Lobster Board, and I would point out both Councils and NOAA. We've gone through a whole series of issues, and I would just kind of summarize them. We've talked about the need for better enforcement offshore. The New England Council just went through a Deep-Sea Coral Amendment.

You have a New England Council Habitat Amendment, a Mid-Atlantic Council Habitat Amendment. A number of us on this Coral have been pretty much preoccupied with the issue of Right Whales and the co-occurrence of lobster gear and Right Whales. Now, as the Board Chairman correctly notes, we've got the issue of Gulf of Maine wind power.

In my own case, I've received a couple of very preliminary briefings about where wind power may go in the Gulf of Maine, and on Georges Bank. It is pretty horrifying, to be blunt, how little information you have on the location of where the lobster gear is set. Now, I am not deluding myself at all, and I'll be blunt and just say that putting trackers on lobster boats is bound to be extremely controversial, and I totally understand why it would be controversial.

We've had about five or six issues that have come up before the Lobster Board, where we need better spatial and temporal information on the lobster fishery, as a means of protecting

that industry from some of the large-scale activities that are now competing with it. At some point I think the Board needs to have a discussion of whether or not they want to write down all those reasons.

You know like a white paper or whatever, summarize those reasons, and then consider including some part of the puzzle for tracking devices either in all of federal waters, or a subset of the federal waters, as a means of protecting the industry. Well, what you really need on a wind power issue is at least two or three years on a really accurate information on where the fishery is taking place.

Otherwise, you're going to run the real possibility of having another situation like southern New England, where the wind companies are basically pushing the industry out of 1500 square miles of area, which is going to have huge impacts on an industry that was managed. I guess my question to you, Mr. Chair, in terms of process.

How do we do this? Do we do a white paper? Do we schedule or put it on a formal agenda, and give the industry notice of what we're going to discuss? What is the best way to move forward? Because I think there is a need for at least a discussion on this, and clearly fleshing out the logic behind it.

CHAIR MCKIERNAN: David, I would like to take you up on your offer, and assist you, and pledge not only my support, my agency's support to maybe developing a position paper on this. I think you've just eloquently described the litany of management actions that the lobster industry has faced that if there had been better delineation of fishing locations, it might have turned out differently, or have been less controversial. I would like to see us put together a paper like that, maybe in a draft form for the Board's reading for the next meeting.

Does anyone object to that? Does anyone on the Board object to, David if you're willing to take the lead on that. Again, I would offer you my support as coauthor, and even some of my staff's support. We feel this is a critical issue. Can we get some discussion on that? It would be a draft white paper for the Commission to review, about the need for better

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delineation of fishing location through some kind of tracking technology. Toni, are there any comments, any hands up?

MS. KERNS: You have one hand up, Pat Keliher, and then I have a follow up question when Pat is done, Dan.

CHAIR McKIERNAN: Okay, Pat Keliher.

MR. KELIHER: I don't object to the development of a draft white paper. I just remind the Board that there were conversations with the Agency around trackers, as it pertains to whales. We still have not seen any proposed rules come out of the Agency to date. Based on the timeline that they have set with the Courts; I'm assuming that it will be sometime this fall. We may or may not see something there, but I just bring that up as a reminder.

CHAIR McKIERNAN: Toni.

MS. KERNS: One, I was going to remind the Board that we did make the request, I believe, in a letter almost two years ago now, for trackers to be on federal vessels to GARFO or to NOAA. Then, is this white paper focusing on federal vessels or all lobster vessels? Then after that, Tim had his hand up. I don't think it was directly related to the white paper though.

CHAIR McKIERNAN: Well, my response to that is I think that is the issue that can be raised in the white paper, is that there seems to be a much more urgent need for data in the federal zone than in the state waters, but I think we should describe that.

MS. KERNS: Thank you for that clarification, and then Tim has his hand up.

CHAIR McKIERNAN: Tim.

MR. DONOVAN: I just wanted to add along the enforcement line. Currently OLE is conducting a pilot program with an ROV, Remote Operating

Vehicle, to do some gear inspections offshore. Hopefully some time in November, I'll have data to be shared with both the Lobster Board and the Law Enforcement Committee regarding the results of that activity. I just wanted to give you all a heads up.

CHAIR McKIERNAN: All right, thank you. Is there any other discussion on this topic? If not, we'll move on to.

MR. KELIHER: Mr. Chairman, I am not sure if I had my hand up. Just as far as the white paper. I think it's going to be critical that the draft include some comments on who the lead is going to be. Is it going to be the Commission, or is it going to be the Agency? Are we recommending that the Agency take that lead?

CHAIR McKIERNAN: I'm sorry, Pat, when you say the Agency taking the lead, in terms of regulating something like that or bringing it to the attention?

MR. KELIHER: As far as actually the regulatory side of it, yes.

CHAIR McKIERNAN: Well, that is a good question, because I fear that given NOAAs longer rulemaking process, and I'm being kind, I wonder if the states could require it sooner, if that was the decision to move forward. I worry that you know with offshore wind development coming in the next handful of years.

In my view we need this data within just a couple years to get in that conversation. I'm not sure if NOAAs rulemaking process, if they would be up to the task of being that nimble. Anyway, I think that's what this white paper should try to flesh out. I think it is important to be open and discuss some of these points. All right, let's move on. Thank you, Pat.

MS. KERNS: Dan, I'm sorry. I was trying to tell you that David Borden also had his hand up.

CHAIR McKIERNAN: David Borden, go ahead.

MR. BORDEN: I'm happy to work on that per your request with you, and my suggestion is there are probably a few of our state agencies on this call that

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would want to have a member of their staff involved in that. I think we should broaden it if we have volunteers.

CHAIR MCKIERNAN: Certainly. Are there any volunteers at this time from any of the other states?

MS. KERNS: I don't see any other hands, but folks that want to volunteer, or maybe we might ask for additional help, can e-mail Caitlin.

CONSIDER FISHERY MANAGEMENT PLAN REVIEW AND STATE COMPLIANCE REPORTS

CHAIR MCKIERNAN: Okay, thank you. All right let's move on. We're pretty much on schedule to move on to the Fishery Management Plan Review and State Compliance Reports. Caitlin.

MS. STARKS: Can everyone see my slide? All right, great. We'll be going over the FMP reviews for lobster for the 2019 fishing year, and then Jonah crab for 2018 and 2019 fishing years, starting off with lobster.

FMP REVIEW FOR AMERICAN LOBSTER FOR THE 2019 FISHING YEAR

MS. STARKS: As you can see in this figure, the lobster fishery has grown quite substantially in landings over the last 40 years, and the all-time high occurred in 2015. In 2019 coastwide commercial landings were 125.8 million pounds, which is a 15 percent decrease for 2018 landings. The largest contributors to the 2019 fishery were Maine, which is shown as the orange line on the graph, and Massachusetts, which is shown as the gray line, and those contributed 80 percent and 13 percent of landings respectively, and the ex-vessel value for lobster landings in 2019 was 630 million.

Moving on to the monitoring information, starting with trawl surveys for 2019. These are the Maine and Long Island Sound Surveys, but there is other state information in the FMP

Review. But for the Maine and New Hampshire Trawl Survey, the spring Survey Abundance Indices, which are shown as the top figure on the left, increased in 2019 from 2018, and they are above the time series mean.

Fall survey abundance indices, which is on the bottom, decreased in 2019, but they are also above the time series mean. Then for Long Island Sound there has been considerable declines in the spring and fall indices over time. The spring 2019 Lobster Abundance Index was the third lowest in the time series, but it's similar to 2017 and 2018.

Then sadly, the fall 2019 survey was the first time since the survey began in 1984 that no lobsters were caught in September and October. These are the VTS survey results for 2019. For Maine VTS there were slight decreases in the number of sublegal and legal lobsters caught in 2019, compared to 2018.

In the Gulf of Maine portion of Massachusetts, the mean CPUE of sublegal lobsters, which is the top line, was quite a bit lower in 2019 than 2017 and 2018, and the mean catch-per trap of legal sized lobsters also decreased from 2018 and was below the time series average. Then these graphs show the young of year surveys for Maine and Massachusetts.

In Maine settlement indices in 2019 increased from 2018 in all areas, and they are near the time series average in Areas 511 and 512, but they continue to be below the series average for Area 513 east and west. Then in Massachusetts, densities of young of year lobsters were low, compared to the time series average in all of the sampling locations, except for the south shore.

Then in Gulf of Maine there were no young of year lobsters found in the Boston sampling regions, and in southern New England there were no young of year lobsters found in the Buzzards Bay sampling locations. We've already discussed this a bit today, so I'll make it quick.

But just to note that most of the Addendum XXVI requirements were implemented by January, 2020, but that spatial resolution component has been

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delayed to January 1, 2021, along with the other data elements that Toni went over earlier, and that was to allow for the necessary changes to be made to the data collection platforms.

The Plan Review Team noted a few issues in the state compliance reports. First, New Jersey completed three fisheries sampling trips in 2019, although the minimum requirement under Addendum XXVI is ten total trips. New Jersey noted that in recent years it has been increasingly difficult to get compliance and willingness from vessel captains to accommodate their observers onboard, and then Connecticut also did not complete any sea or port sampling in 2019, due to continued staff and budget limitations. Lastly, the PRT noted that Massachusetts and Connecticut weren't able to provide their compliance reports by the August 1st deadline. As for *de minimis* requests, Delaware, Maryland, and Virginia have requested continued *de minimis* status, and all three states meet the requirement that their most recent two-year average commercial landings are under 40,000 pounds.

The PRT Recommends approving those requests. The additional PRT recommendations are summarized on this slide, first being approving the *de minimis* requests, and they also recommended that the Board review the monitoring requirements for southern New England, given that the stock status is unfavorable, and that it has been difficult to obtain sea sampling.

Then the PRT also recommended coastwide consideration be given to the transfer of tags between traps, in order to remove the need for exchange tags. Then also, that continued efforts to improve effort quantification in the lobster fishery are recommended, as well as research on lobster growth, maturity, connectivity, settlement and larval dynamics. Lastly, the PRT recommends engaging the Committee on Economic and Social Sciences or CESS, to consider or develop socioeconomic

metrics that can be used to characterize changes in the fishery.

FMP REVIEW FOR JONAH CRAB FOR 2018 AND 2019 FISHING YEARS

MS STARKS: Next, I'll go over the Jonah crab FMP reviews, and if it's okay, I'll just hold questions until the end.

In 2019, approximately 16 million pounds of Jonah crab were landed along the Atlantic coast, and that is a 21 percent decrease from the 2018 total of 19.8 million pounds. The states of Massachusetts and Rhode Island were the largest contributors to landings in the fishery in both of those years, landing 61 percent and 21 percent of the total in 2019, respectively.

Addendum III asks the states to expand their fishery independent surveys to collect more information on Jonah crab, though no surveys are required. This is the Massachusetts Trawl Survey results, but again the other states survey results are included in the FMP Review. Trends across the time series for this trawl survey are generally positive, though the 2019 data points for all seasons and regions in the Massachusetts Trawl Survey were below their time series medians, except for the spring survey in Gulf of Maine.

The status of the Jonah crab stock is generally unknown, and a coastwide stock assessment has not yet been conducted. In the FMP Review there is information on a number of studies that were completed in recent years. Then next month we do have a pre-assessment data workshop scheduled for Jonah crab, to evaluate all available data sources, and to determine whether enough data are available to conduct a stock assessment.

This is just a summary of the current management program for Jonah crab. The FMP was approved in 2015, establishing the permit requirements, minimum size, prohibition on the retention of egg-bearing females, and recreational possession limit. Then Addendum I established the bycatch limit for non-trap gear and non-lobster trap gear.

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Addendum II established coastwide claw harvest provisions, and the bycatch definition, and then lastly Addendum III improved the harvester reporting and data collection. Only one issue was noted by the PRT with regard to state compliance with the FMP requirements, and this has been noted for the past several years. New York has implemented all of the management measures, except for the regulations to limit the directed pot fishery to lobster permit holders only, and the 1,000-crab bycatch limit.

New York has noted that it's unclear how long it will take to get this legislation revised to implement these provisions, but that in practice the fishery is operating under these conditions already. The report also notes that New York had been seeing a decline in Jonah crab landings over time, and that in 2019 New York only contributed 0.8 percent of the coastwide Jonah crab landings.

New York also notes that they do currently have limited entry for crab licenses, and a moratorium on the lobster license. The PRT also noted that Massachusetts and Connecticut have been unable to meet the compliance report deadline for the last two years. Delaware, Maryland, and Virginia have requested continued *de minimis* status for Jonah crab, and they all meet the requirement that the average commercial landings constitute less than 1 percent of the average coastwide commercial catch for the last three years.

The PRT recommends approving all three of these requests, and with *de minimis* status these states would be exempt from fishery independent sampling and for sea sampling requirements. Then these are the PRTs recommendations for this year, and for last year's FMP reviews. First, they noted the concern about the lack of Jonah crab regulations in New York, which was first raised as a concern in 2017. They also recommended that jurisdictions with crab-only harvesters

should report on the number and collective effort of these participants.

That research of the Jonah crab species should continue, in order to complete a coastwide stock assessment, and also that the LEC should review compliance in the Jonah crab fishery, given it's a relatively new FMP, and there may be a learning opportunity there. These are the actions that the Board can consider today, both consider approval of the lobster FMP review, and state compliance reports, as well as the two Jonah crab FMP reviews. With that I can take any questions.

CHAIR MCKIERNAN: Are there any questions from the Board?

MS. KERNS: Cheri Patterson.

CHAIR MCKIERNAN: Cheri.

MS. PATTERSON: Caitlin, I have a question in regards to the first bullet in the lobster fishery management plan memo from the PRT. Has the TC talked about reducing required sampling trips if there is actually a reduction in effort for a particular state?

MS. STARKS: Short answer is I don't think we've discussed that recently. But it is something that we can have the TC discuss.

MS. PATTERSON: It just seems a little counterintuitive to keep making a state do sea sample trips, if they just don't have the effort involvement. Maybe that should be something that is looked at on a more regular basis to adjust sampling trips appropriately to effort. To that, Mr. Chair, after all the questions for the lobster I can move forward with a motion.

CHAIRMAN MCKIERNAN: Thank you, Cheri, is there anyone else who would like to ask any questions about the two compliance reports?

MS. KERNS: I see Pat Keliher and Ritchie White.

CHAIR MCKIERNAN: Go ahead, Pat.

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MR. KELIHER: Considering the time that has passed with New York on this issue, even though it is relatively small from a compliance standpoint. I think I would recommend that the Board send a letter to New York, asking them to come into compliance for the next year. At least they'll have something to give to their legislature. We all know that when we're trying to make changes, and the legislature is involved, it adds a level of complexity sometimes, and maybe a letter like that would garner some assistance for them.

CHAIR MCKIERNAN: Pat, as Chair, maybe you can help me. Would that action have to go to the Policy Board before a letter went out?

MR. KELIHER: Yes, I believe it would, and I would look to Toni and Bob, and I'm quite sure it would have to be approved by the Policy Board.

CHAIR MCKIERNAN: Do you want to put that in the form of a motion to propose that the Board submits to the Policy Board that New York be communicated to about the lack of compliance on those items within the Jonah crab management plan.

MR. KELIHER: Happy to call that a motion, Mr. Chair.

CHAIR MCKIERNAN: Pat has made that motion, is there a second?

MS. KERNS: David Borden has his hand up. Mr. Chair, I guess you've already made it, so let's go ahead and help Maya get the motion up on the screen, since it's already been made, really quick here. Maya, we move to recommend to the ISFMP Policy Board a letter be sent to New York regarding the implementation of Jonah crab measures. Does that work, Pat?

MR. KELIHER: Yes, that is perfect.

CHAIR MCKIERNAN: We don't have a second yet. David Borden, are you seconding that?

MR. BORDEN: Yes.

CHAIR MCKIERNAN: Any discussion on the motion?

MR. G. RITCHIE WHITE: Mr. Chairman, Ritchie, I had my hand up.

CHAIR MCKIERNAN: Go ahead, Ritchie.

MR. WHITE: I was going to raise the same issue, and I think the letter needs to have the word about you know stricter measures at the end of the year if there isn't action taken, so whether it's implemented within a year or the legislature is passing it, or the bill is before the legislature. You know we need to see some action or we'll find New York out of compliance. That would be my suggestion.

CHAIR MCKIERNAN: This will be taken up at the Policy Board, and maybe you can weigh in at that time as well. Is there any objection to this motion?

MS. KERNS: Ritchie, do you need to have your hand up? Emerson Hasbrouck, you now have your hand up.

MR. HASBROUCK: Yes, can you hear me? I'm having some technical difficulties on this end.

CHAIR MCKIERNAN: I can hear you, yes.

MR. HASBROUCK: Not opposed, but I just want you to know that New York is going to abstain.

CHAIR MCKIERNAN: Thank you, Emerson. Because it won't be unanimous, do we need to do a roll call?

MS. KERNS: It doesn't have to be a roll call, Dan, it could just be a regular. I guess you could ask if there is any objection, noting that New York has abstained.

CHAIR MCKIERNAN: Outside of New York's abstention, is there any other dissent on this motion? None, Toni?

MS. KERNS: I don't see any hands.

CHAIR MCKIERNAN: All right, then it passes by unanimous consent, with the exception of one

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abstention, which is by the state of New York.
Now we need a motion to approve the Plan Reviews.

MS. KERNS: I believe Cheri Patterson said she would be ready to make a motion for that.

CHAIR MCKIERNAN: Cheri.

MS. PATTERSON: I would like to move to approve the Lobster Fishery Management Plan Review for the 2019 fishing year, state compliance reports and *de minimis* status for Delaware, Maryland, and Virginia.

CHAIR MCKIERNAN: Is there a second?

MS. KERNS: Ray Kane.

CHAIR MCKIERNAN: Thank you, Raymond Kane second, any discussion on the motion?

MS. KERNS: We have David Borden with his hand up, Emerson, and Ray. I'm not sure if they want to speak, or if they were offering a second.

CHAIR MCKIERNAN: David Borden, you're first.

MR. BORDEN: I mistakenly had my hand up, Mr. Chairman, I support the motion.

CHAIR MCKIERNAN: Emerson, you have anything you would like to add?

MR. HASBROUCK: No, thank you, Mr. Chairman. My hand was up to second the motion.

CHAIR MCKIERNAN: Raymond, I'm assuming you don't have any comments, or do you, Raymond Kane?

MR. KANE: I believe we have consensus, Dan, let's move this along.

CHAIR MCKIERNAN: All right, hearing no objections, it is passed by unanimous consent.

Is there any other business to come before the Board?

MS. KERNS: Dan, we just have one more motion from Cheri for the Jonah crab FMP Reviews.

CHAIR MCKIERNAN: Oh, I'm sorry, yes, Cheri.

MS. PATTERSON: I would like to move to approve the Jonah crab FMP Reviews for the 2018 and 2019 fishing years, state compliance reports, and *de minimis* status for Delaware, Maryland, and Virginia.

CHAIR MCKIERNAN: Is there a second?

MS. KERNS: You have a second from David Borden.

CHAIR MCKIERNAN: Thank you, David. Are there any objections to the motion?

MS. KERNS: I see no hands raised, Dan.

CHAIR MCKIERNAN: It's adopted by consent, and finally other business.

ADJOURNMENT

CHAIR MCKIERNAN: Is there any other business to come before the Board?

MS. KERNS: I do not see any hands raised for other business.

CHAIR MCKIERNAN: All right, well thank you everyone, it was a productive meeting. Thank you, Toni, for assisting me in identifying the speakers, and thanks to all the presenters today. This meeting is adjourned.

(Whereupon the meeting adjourned at 4:32 p.m. on October 19, 2020.)

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captive rail shippers to utility customers, favoring an approach that conforms to Generally Accepted Accounting Principles (GAAP), and determining that removing the effect of deferred taxes led to a more accurate representation of railroad profitability. *See id.* at 272–75; *Consol. Rail Corp. v. United States*, 855 F.2d 78, 93 (3rd Cir. 1988) (affirming the ICC’s decision and finding that the “adjustment of its formula in the interests of accuracy is rational”). Does the ICC’s reasoning for adopting the utility method remain valid, specifically with respect to analogizing captive shippers to utility customers, determining whether the utility method continues to conform with GAAP today, and finding that the utility method led to a more accurate representation of railroad profitability?

Additionally, the Joint Carriers will be requested to file workpapers sufficient to replicate the analysis underlying their proposals and to make those workpapers available, upon request, to other participants in this proceeding, under an appropriate protective order.

Interested persons may file comments by March 1, 2021. If any comments are filed, replies will be due by March 31, 2021.

It is ordered:

1. A rulemaking proceeding is initiated, as discussed above.
2. Comments are due March 1, 2021; replies are due March 31, 2021.
3. The Joint Carriers are requested to file workpapers sufficient to replicate the analysis underlying their proposals and to make those workpapers available, upon request, to other participants in this proceeding, under an appropriate protective order.
4. Notice of this decision will be published in the **Federal Register**.
5. This decision is effective on its service date.

Decided Date: December 22, 2020.

By the Board, Board Members Begeman, Fuchs, and Oberman.

Andrea Pope-Matheson,
Clearance Clerk.

[FR Doc. 2020–28864 Filed 12–30–20; 8:45 am]

BILLING CODE 4915–01–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Parts 229 and 697

[Docket No. 201221–0351]

RIN 0648–BJ09

Taking of Marine Mammals Incidental to Commercial Fishing Operations; Atlantic Large Whale Take Reduction Plan Regulations; Atlantic Coastal Fisheries Cooperative Management Act Provisions; American Lobster Fishery

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Proposed rule; request for comments.

SUMMARY: NMFS proposes to amend the regulations implementing the Atlantic Large Whale Take Reduction Plan to reduce the incidental mortality and serious injury to North Atlantic right whales (*Eubalaena glacialis*), fin whales (*Balaenoptera physalus*), and humpback whales (*Megaptera novaeangliae*) in northeast commercial lobster and crab trap/pot fisheries to meet the goals of the Marine Mammal Protection Act and the Endangered Species Act. In addition, this action also proposes a small revision to Federal regulations implemented under the Atlantic State Marine Fisheries Commissions’ Interstate Fishery Management Plan for Lobster to increase the maximum length of a lobster trap trawl groundline. This action is necessary to reduce the risks to North Atlantic right whales and other large whales associated with the presence of fishing gear in waters used by these animals.

DATES: Submit comments on or before March 1, 2021.

Public Hearings: Eight or more remote public meetings will be held during the public comment period. See **ADDRESSES** to obtain public hearing notification details.

ADDRESSES: You may submit comments, identified by NOAA–NMFS–2020–0031, by either of the following methods:

- **Electronic Submission:** Submit all electronic public comments via the Federal eRulemaking Portal. Go to www.regulations.gov/#!docketDetail;D=NOAA-NMFS-2020-0031, click the “Comment Now!” icon and complete the required fields, and enter or attach your comments.

Instructions: All comments received that are timely and properly submitted

are a part of the public record and will generally be posted for public viewing on www.regulations.gov without change. All personal identifying information (e.g., name, address, etc.), confidential business information, or otherwise sensitive information submitted voluntarily by the sender will be publicly accessible. We will accept anonymous comments (enter “N/A” in the required fields if you wish to remain anonymous). Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by us.

Oral Comments: Remote public meeting access information will be posted on the Plan website fisheries.noaa.gov/ALWTRP or contact Colleen Coogan for information on locations and dates. Contact information below.

Copies of this action, including the Draft Environmental Impact Statement (DEIS) and the Regulatory Impact Review/Initial Regulatory Flexibility Analysis (DEIS/RIR/IRFA) prepared in support of this action, are available via the internet at <https://www.regulations.gov/> or by contacting Colleen Coogan at the contact information below.

Several of the background documents for the Plan and the take reduction planning process can be downloaded from the Plan website. Copies of the DEIS/RIR/IRFA for this action can also be obtained from the Plan website. Information on the Decision Support Tool and Co-Occurrence model used to support the development and analysis of the proposed regulations can be found in appendices to the DEIS. The complete text of current regulations implementing the Plan can be found in 50 CFR 229.32 or downloaded from the Plan’s website, along with outreach compliance guides to current regulations. The complete text of current regulations implementing the Lobster Plan can be found at 50 CFR part 697.

FOR FURTHER INFORMATION CONTACT: Colleen Coogan, NMFS, Greater Atlantic Regional Fisheries Office, 978–281–9181, Colleen.Coogan@noaa.gov.

SUPPLEMENTARY INFORMATION:

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Background

The Atlantic Large Whale Take Reduction Plan (ALWTRP, or Plan) was originally developed pursuant to section 118 of the Marine Mammal Protection Act (MMPA, 16 U.S.C. 1387 to reduce the level of mortality and serious injury of three stocks of large whales (fin, humpback, and North Atlantic right) interacting with Category I and II fisheries. Under the MMPA a strategic stock of marine mammals is defined as a stock: (1) For which the level of direct human-caused mortality exceeds the Potential Biological Removal (PBR) level; (2) which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the Endangered Species Act of 1973 (ESA) within the foreseeable future; or (3) which is listed as a threatened or endangered species under the ESA or is designated as depleted under the MMPA (16 U.S.C. 1362(19)). When incidental mortality or serious injury of marine mammals from commercial fishing is over the PBR level, NMFS convenes a take reduction team made up of stakeholders from the fishing industry, fishery management councils and commissions, state and Federal resource management agencies, the scientific community and conservation organizations.

The Atlantic Large Whale Take Reduction Team (ALWTRT or Team) was established in 1996 and is made up of 60 members, including about 22 trap/pot and gillnet fishermen or fishery representatives. Because both right whales and fin whales are listed as endangered, they are considered strategic stocks under the MMPA. Due to population growth, in 2016 certain stocks of humpback whales, which are taken in the Atlantic Category I and II fisheries regulated under the ALWTRP, are no longer listed as endangered or threatened under the Endangered Species Act (81 FR 62259). However, although they are not currently a strategic stock, they continue to be included in the Plan because they are taken in Category I fisheries and will continue to benefit from Plan requirements and proposed revisions.

Specific Category I and II fisheries addressed by the Plan include the Northeast sink gillnet, Northeast drift gillnet, Northeast anchored float gillnet, Southeast Atlantic gillnet, Mid-Atlantic gillnet, Southeastern U.S. Atlantic shark gillnet, Atlantic mixed species trap/pot,

Atlantic blue crab trap/pot, and Northeast/Mid-Atlantic American lobster trap/pot. Proposed modifications for this rulemaking are limited in scope to the crab and trap/pot fisheries in the Northeast Region Trap/Pot Management Area (Northeast Region). The Northeast Region encompasses those waters where year-round trap/pot measures are required as described in 50 CFR 229.32. This area includes the Northern Inshore State Trap/Pot Waters, the Northern Nearshore Trap/Pot Waters Areas, the Massachusetts Restricted Area, the Great South Channel Restricted Trap/Pot Area, the Jordan Basin, Jeffreys Ledge, and Stellwagen Bank Restricted Areas and the northeast Offshore Trap/Pot Waters Area that are within the area bounded on the west by a straight line running south from the coast at 41°18.2' N latitude, 71°51.5' W longitude to 40°00' N latitude, and then bounded on the south by a line running east along 40°00' N latitude to the eastern edge of the Exclusive Economic Zone (EEZ) (Figure 1).

The background for the take reduction planning process and initial development of the Plan is provided in the preambles to the proposed (62 FR 16519, April 7, 1997), interim final (62 FR 39157, July 22, 1997), and final (64 FR 7529, February 16, 1999) rules that implemented the original plan.

Since its 1997 implementation, the Plan has been modified several times to reduce the risk of mortality and serious injury of large whales incidentally taken in commercial sink gillnet and trap/pot gear. The most recent final rule was published in May 2015 (80 FR 30367, May 28, 2015). Because of the declining population and the persistent incidental entanglement mortalities and serious injuries above the stock's PBR, Plan modifications have, and continue to be, directed primarily at reducing the risk of commercial fisheries on the North Atlantic right whale.

Right Whale Population Decline

In a peer-reviewed scientific paper published in 2017, Pace *et al.* (see References section at end of this preamble), confirmed that due to decreased calving rates and increased mortality, much of it unseen, the North Atlantic right whale population had been in decline since 2010 (Pace *et al.* 2017). Seventeen right whale mortalities were documented in 2017, causing NMFS to declare an Unusual Mortality Event, which continues through 2020. Although most right whale mortalities in 2017 occurred in Canadian waters and not all were confirmed to be entanglement related, three mortalities first seen in U.S. waters exhibited signs

of entanglement. The evidence of a declining population exacerbated by high mortalities caused NMFS to convene subgroups of the ALWTRT in early 2018 to investigate the feasibility of risk reduction measures. A meeting of the full Team was held in October 2018 to develop recommendations for modifying the Take Reduction Plan.

As described in detail in Chapter 3 of the DEIS prepared in support of this action and very briefly below, the location and exact fishery in which each entanglement incident occurs can rarely be determined. However, over 95 percent of vertical buoy lines fished along the U.S. East Coast in waters not currently exempt from Plan requirements are fished by the lobster and Jonah crab trap/pot fishery—93 percent within the Northeast Region. For this reason and given the magnitude of the issue, NMFS is addressing this issue in phases to expedite rulemaking. The initial phase focused the scope of the Team meetings on developing recommendations for the Northeast Region lobster and Jonah crab trap/pot fisheries. In 2021, the ALWTRT will be asked to recommend modifications to the Take Reduction Plan to address risk in the remaining fixed gear fisheries that use buoy lines, including other trap/pot fisheries and gillnet fisheries coastwide. Table 2.3 in the DEIS provides additional information supporting prioritizing the lobster and Jonah crab trap/pot fisheries in the Northeast Region first.

Team members submitted risk reduction proposals for the October 2018 in-person ALWTRT meeting. The lack of agreement on whether or how much risk reduction was necessary, or metrics to compare the wide range of proposal elements, challenged the Team's ability to develop recommendations. In anticipation of a spring 2019 meeting, the Team created workplans for NMFS identifying data needs to support decision making on Plan modification recommendations.

While the MMPA establishes PBR as a goal for take reduction, the Team identified the need for a risk reduction target that better described what their recommendations should achieve. NMFS estimated that to reduce serious injury and mortality below PBR, entanglement risk across U.S. fisheries needs to be reduced by 60 to 80 percent. There is much uncertainty regarding the source of entanglement mortality to the North Atlantic right whale population. There is no gear present or retrieved from most documented incidents of dead or seriously injured right whales. When gear is retrieved, it can rarely be identified to a fishery or to a location.

For the years 2009 through 2018, an average of five entanglement-related serious injuries and mortalities a year were observed. Only 0.2 a year could be attributed with certainty to U.S. fisheries and only 0.7 a year to Canadian fisheries. An annual average of four documented incidental entanglement mortalities and serious injuries could not be attributed to a country.

NMFS' has produced *Guidelines for Assessing Marine Mammal Stocks* to address how to consider PBR for transboundary stocks if certain information is available. Those Guidelines specify that in transboundary situations where a stock's range spans international boundaries or the boundary of the U.S. Exclusive Economic Zone (EEZ), the best approach is to establish an international management agreement for the species and to evaluate all sources of human-caused mortality and serious injury (U.S. and non-U.S.) relative to the PBR for the entire stock range. In the interim, if a transboundary stock is migratory and it is reasonable to do so, the fraction of time the stock spends in U.S. waters should be noted, and the PBR for U.S. fisheries should be apportioned from the total PBR based on this fraction. For non-migratory transboundary stocks (e.g., stocks with broad pelagic distributions that extend into international waters), if there are estimates of mortality and serious injury from U.S. and other sources throughout the stock's range, then PBR calculations should be based upon a range-wide abundance estimate for the stock whenever possible.

Therefore, if a stock spends half its time in U.S. waters, PBR would be divided by two, resulting in a U.S. PBR for right whales of 0.5. Thus, the U.S. fishery related mortality would need to be reduced to below 0.5 (instead of 0.9 as is currently the goal). The Atlantic Scientific Review Group (established under MMPA sec. 117) that advises NMFS on Stock Assessment Reports, including PBR calculations, does not support this approach yet because we do not have sufficient information to apportion time spent in U.S. versus Canadian waters. Therefore, the U.S. target goal remains 0.9; however, NMFS did consider the relative threat including the time right whales spend in U.S. and Canadian waters when apportioning the unattributed entanglement incidents to create the risk reduction target, as described below.

For the purposes of creating a risk reduction target, NMFS assigned half of these right whale entanglement incidents of unknown origin to U.S. fisheries. Under this assumption, a 60

percent reduction in serious injury or mortality would be needed to reduce right whale serious injury and mortality in U.S. commercial fisheries, from an annual average of 2.2 to a PBR of 0.9 per year.

The upper bound of the risk reduction target (80 percent) considered estimated but unseen right whale mortalities, generated by a new population model (described in Hayes *et al.* 2019). Because all observed mortalities that can be attributed to a source have been caused by either entanglements or vessel strikes (except for some natural neonate mortalities), estimated non-observed mortalities are likely caused primarily by entanglements and vessel strikes. However, there is no way to definitively apportion unseen but estimated mortality across causes or country of origin (United States or Canada). For the purposes of developing a conservative target, NMFS assumed that half of the unseen mortalities occurred in U.S. waters and were caused primarily by incidental entanglements.

However, given the additional sources of uncertainty in the 80 percent target, as well as the challenges achieving such a target without large economic impacts to the fishery, the Take Reduction Team focused on recommendations to achieve the lower 60 percent target.

Additionally, to support the April 2019 Team meeting, the NMFS Northeast Fisheries Science Center created a preliminary decision support tool (DST): A model for analyzing and comparing how various proposal elements contributed toward the target risk reduction.

Both the target risk reduction and the DST generated a common understanding of the scope of measures that NMFS determined were necessary to reduce mortality and serious injury to below the PBR level for right whales. After some discussion, there was general agreement that risk reduction should be shared across jurisdictions so that no one state or fishing area would bear the bulk of the restrictions. This encouraged adoption of measures across the Northeast Region that would be resilient to changes in North Atlantic right whale distribution within the region. All but one Team member agreed that NMFS should move forward on a framework of recommended modifications to achieve 60 percent risk reduction. The dissenting Team member did not believe that the recommended modifications were sufficient to achieve PBR. The Team's recommendations were essentially a framework, largely dependent on extensive buoy line reduction goals and expansive

requirements to use weak rope or weak insertions with breaking strengths of 1,700 lbs. (771 kgs.) or less that would allow large whales to break free of gear before a serious injury or mortality can occur (Knowlton *et al.* 2016).

In acknowledgement of the regional diversity of the fisheries, New England states sought and were given the lead in developing measures and implementation details related to the Team's near-consensus recommendation. Maine, New Hampshire, Massachusetts, and Rhode Island conducted public meetings before and after drafting measures. NMFS also worked closely with the Team members that represent the Atlantic Offshore Lobster Association on measures for the northeast Offshore Trap/Pot Waters Area, widely referred to as Lobster Management Area (LMA) 3. NMFS conducted its own scoping in August 2019 (84 FR 37822, August 2, 2019), receiving over 130 unique written comments as well as over 89,000 form emails generated by about a dozen campaigns. Oral comments were also collected during eight public meetings attended by over 800 stakeholders. The measures proposed in this rule are drawn largely from proposals received from New England states. Those proposals can be found in Appendix 3.2 of the DEIS. As described in the DEIS associated with this action, some Plan modifications in state waters will be implemented by Maine and Massachusetts under state laws and so are not included in the proposed Federal measures. Additionally, some measures proposed by the states for this rulemaking were not adopted in the regulations proposed here because they were inconsistent between adjacent states. Public comments received during scoping were considered throughout the development of the DEIS and proposed rule (Appendix 3.3 of the DEIS).

It should be noted that a draft population estimate developed by the North Atlantic Right Whale Consortium for their October 2020 meeting indicates that the right whale population has declined further, to about 366 right whales as of January 2019. Further peer review of this preliminary estimate is anticipated during Scientific Review Group meetings in early 2021 in preparation for an updated stock assessment. The updated stock assessment information along with other updates and analyses will be considered in drafting the final rule and environmental impact statement.

Summary of Proposed Changes

NMFS proposes changes for lobster and crab trap/pot gear in the Northeast

Region. The proposed measures detailed below seek to reduce large whale entanglement largely through risk reduction measures consistent with the April 2019 Team recommendations, which can be found in Table 3.1 in the DEIS. The proposed changes fall into four primary categories: (1) Gear modifications to reduce the number of vertical lines; (2) seasonal restricted areas that allow ropeless fishing but would be seasonally closed to fishing with persistent buoy lines; (3) gear modifications to include replacement of buoy lines with weak rope or weak insertions placed in intervals in buoy lines; and (4) additional gear marking and expansion of gear marking requirements throughout the Northeast Region.

Gear configuration changes to reduce line numbers include increases to the minimum number of traps per trawl (trawling up) in varying degrees related to distance from shore and area fished. In LMA 3, an extension of the maximum trawl length (distance between endlines) is also proposed to accommodate the increase in traps per trawl proposed for that area. Modified gear configuration to require weak rope in buoy lines or weak insertion at prescribed intervals in buoy lines are proposed across the Northeast Region crab/lobster fisheries. An alternative to allow fishermen the option of moving the weak link at the buoy connection to the surface system connect below the buoy is also proposed.

We are co-proposing three alternatives, as described in more detail below, for consideration concerning seasonal restricted areas. Under the first alternative, analyzed in the DEIS, we propose two new seasonal restricted areas that would be open to harvest of lobster and Jonah crab using ropeless fishing technology that does not require the use of persistent buoy lines, as well as changes to existing Northeast Region seasonal restricted areas to allow fishing in those areas with ropeless technology. Northeast state-specific gear marking modifications are also proposed. Under the second alternative, there would be only one new seasonal restricted area south of Cape Cod and Nantucket Island. Under the third alternative, NMFS is co-proposing provisions under which the imposition of seasonal restrictions on fishing in an area proposed for seasonal restrictions in LMA1 offshore of Maine would be triggered only if certain determinations are made in the future. We are soliciting comment on the relative merits of the three co-proposed approaches, including comment concerning the factual justifications for each approach,

the legal adequacy of each approach, and the impacts of each approach on fishermen and other affected stakeholders.

In addition to the proposed Federal regulatory measures reflected in the proposed rule, modifications to the Plan to achieve at least a 60 percent risk reduction includes some risk reduction measures that will be implemented by the states of Maine and Massachusetts in exempted or state waters. Specifically, in waters currently exempted from regulations under the ALWTRP, the Maine Department of Marine Resources (MEDMR) will require the use of a weak insertion that breaks at 1,700 lbs. (771 kgs.) or less halfway down the buoy line. Maine has already implemented gear marking requirements consistent with gear marking modifications proposed here. The gear marking changes in Maine become effective September 1, 2020 for all Maine lobster fishermen, including those in Maine exempted waters. The Massachusetts Department of Marine Fisheries (MADMF) will continue their recent practice of extending the state waters closure of the Massachusetts Restricted Area into May until surveys demonstrate right whales have left the area. The DEIS includes an analysis of the risk reduction of the Maine weak insertions and the Massachusetts closure of the state waters of the Massachusetts Restricted Area because they contribute to the required risk reduction. The economic impacts of state measures are not included in the economic analysis of the Federal rulemaking, however. Massachusetts will also restrict buoy line diameters to no greater than $\frac{3}{8}$ inch (0.95 cm) within state waters to restrain the introduction of larger diameter line into the fishery. Even $\frac{3}{8}$ inch (0.95 cm) diameter rope can break at strengths much greater than 1,700 lbs; therefore, while this measure may contribute to future risk reduction by constraining line diameter, that cannot be assumed, and it is difficult to estimate a quantitative risk reduction.

As described fully in Chapter 3 of the DEIS, there are three categories of measures that contribute toward the target 60 percent risk reduction relative to the 2017 baseline:

- The proposed measures in this rulemaking
- the risk reduction measures that will be implemented by Massachusetts and Maine, and
- the lobster fishery management measures in LMA2 and LMA3 that have been implemented or are on a parallel regulatory track with ALWTRP modifications

The measures in this proposed rule were selected because they include those developed by Maine, Massachusetts, and to a lesser extent Rhode Island after extensive stakeholder outreach, supplemented by additional proposed measures and estimated by the DST to, together with the state and existing and anticipated Federal fishery management measures, achieve the 60-percent risk reduction target. Additional analyses using a co-occurrence model developed by IEC Inc. for NMFS demonstrated that proposed plan modifications should reduce the co-occurrence of North Atlantic right whales with lobster and crab buoy lines in the Northeast Region by about 69 percent.

Estimating the risk reduction of the weak insertion measures is more difficult. Nearly all Northeast lobster and crab trap/pot buoy lines would be modified with weak insertion. However, following the state proposals, the proposed rule would not require the insertions at intervals of every 40 feet (12.2 m), which was discussed by the Team as the interval needed to ensure it is equivalent to weak rope. The depth of the lowest weak insertion is also significant, as a whale that encounters a line above the lowest weak insertion can break away from the trawl, reducing the burden of gear on the whale. The risk reduction analysis takes an average of a lower bound of risk reduction estimate that compares the number of insertions to the number that would be required to be equivalent to weak rope and an upper bound estimate that considers the amount of rope above the lowest weak insertion to be weak. By this estimate, the proposed weak rope measures would modify nearly 26 percent of the rope in buoy lines to break at 1,700 lbs. (771 kgs.) or less.

The economic analysis does not estimate the number of vessels affected under the Maine measures within Maine exempted waters. Beyond the Maine exemption area, 3,970 vessels would be impacted, with first year compliance costs estimated at \$6.9 million to \$15.4 million (DEIS Table 6.22). Over the first six years (selected as the average span of time between amendments and consistent with buoy line replacement timing), there will continue to be costs associated with catch losses due to trawl up and closure requirements. The average annual cost in those out years is estimated to be \$5.7 million to \$12.3 million at a three percent discount rate. If Maine and Massachusetts do not implement the state measures identified in their proposals, and upcoming LMA3 aggregated trap measures are not finalized, further modifications to the

Plan would be required to achieve at least the 60 percent target risk reduction in the Northeast Region lobster and Jonah crab trap/pot fisheries to reduce mortality and serious injury to below PBR for North Atlantic right whales. Compliance costs would increase if states did not take these actions and NMFS were to include in Federal regulation the Maine exemption area measures and the extension of the Massachusetts Restricted Area in state waters. As noted above, we are co-proposing three alternatives for consideration concerning seasonal restricted areas. As the first alternative, NMFS proposes two new seasonal restricted areas that would restrict buoy lines but would be open to ropeless fishing; that is, harvesting lobster and Jonah crabs would be allowed using trap/pot trawls that would be retrieved without the use of persistent buoy lines. The purpose of these restricted areas would be to achieve risk reduction and reduce mortalities and serious injuries to below PBR for right whales when combined with the other proposed measures described in this rulemaking. The addition of restricted areas open to ropeless fishing was not included in the ALWTRT framework recommendations, but a seasonal closure south of Cape Cod and Nantucket was proposed by the Commonwealth of Massachusetts to increase risk reduction in southern New England. A restricted area open to ropeless fishing in LMA1 was not included in any state proposal but is proposed here at § 229.32(c)(6)(ii) to achieve sufficient risk reduction in the northern Gulf of Maine.

While NMFS has included both seasonal restricted areas in the proposed regulatory text below, and analyzed them in the DEIS, NMFS has not yet made a final determination as to whether the LMA1 closure is necessary to meet the goal of a 60 percent risk reduction. Accordingly, NMFS is co-proposing two additional alternative options regarding this issue, and is seeking public comment as set forth below:

Alternative 1–A (second co-proposed alternative): Not Including the LMA1 Seasonal Restricted Area.

NMFS is seeking comment on the option to not include the LMA1 seasonal restricted area in the final rule. Commenters that believe this additional restricted area is not warranted to achieve PBR are encouraged to provide specific information or analysis in support of not including the restricted area in the final rule. If NOAA receives information indicating that we can achieve the 60 percent risk reduction without the restricted area, we would

consider not including the restricted area in the final rule. Additionally, if commenters believe that information will be available after issuance of the final rule on this topic, commenters should articulate the nature of that information, describe how the information might affect the decision, and propose a mechanism for evaluating that information in determining whether or not to continue with the restricted area.

Alternative 1–B (third co-proposed alternative): Implementing the LMA1 Seasonal Restricted Areas Only If Certain Triggers are Met.

NMFS is seeking comment on a proposal to provide that the Regional Administrator may implement the LMA1 closure only if certain triggers are met in the future. This option would require the Regional Administrator to examine the available information in advance of October in any given year and determine whether the closure is necessary. Specifically, the Regional Administrator would implement the closure if he or she determines that the frequency of entanglements has not been reduced below 60 percent from the effective date of the final rule. NMFS is considering the following specific language to implement this provision and is interested in any comments on this textual change (see § 229.32(c)(6)(ii) Alternative 1–B).

The Regional Administrator may determine whether the frequency of entanglements from the trap/pot gear in the Northeast region has been reduced by 60 percent from [the effective date of this rule] within a time period that allows meaningful analysis. If the Regional Administrator determines that the frequency of such entanglements has not been reduced by 60 percent, then from October 1 to January 31, it shall be prohibited to fish with, set, or possess trap/pot gear in this area unless it is fished without buoy lines or with buoy lines that are stored on the bottom until they can be remotely released for hauling, or the trap/pot gear is stowed in accordance with § 229.2. Authorizations for fishing without buoy lines must be obtained if such fishing would not be in accordance with surface marking requirements of §§ 697.21 and 648.84.

As relevant to the first and third co-proposed alternatives, the proposed rule would also modify two existing restricted areas to allow fishing without buoy lines. This modification was also not in the Team recommendations or state proposals, but is proposed here to accelerate research and development of ropeless (buoyless) fishing methods so that in the future, commercial fishing

using ropeless technology can be used instead of seasonal closures to allow trap pot fishing while protecting right whales. NOAA has invested a substantial amount of funding in the industry's development of ropeless gear, in specific geographic areas and in general. We anticipate that these efforts to facilitate and support the industry's development of ropeless gear will continue, pending appropriations.

Finally, a number of housekeeping edits were made in the existing regulatory text. The initiation point was added as the final endpoint to the table describing the Great South Channel Area (see table 11 at 50 CFR 229.32(c)(5)(i) in amended text) to fully enclose the restricted area. In a number of places, revisions were made describing the availability of guidance created to aid in compliance with gear configuration and marking measures. In a number of places, state abbreviations were replaced with the complete state names.

See **ADDRESSES** for information on access to the DEIS for a detailed analysis of the impacts of the proposed measures and other measures considered.

Changes Proposed To Reduce the Number of Vertical Buoy Lines

The proposed rule would reduce the number of vertical buoy lines fished outside of areas exempted under the Plan by increasing the minimum number of traps required per trawl (known as trawling-up), based on area fished and distance from shore as indicated in Table 1. Concerns have been raised that the trawling-up requirement of 45 traps per trawl in LMA3 may present a safety concern to a handful of LMA3 vessels that have insufficient deck space or rope storage capacity. NMFS requests LMA3 fishery participants and other reviewers' comments on the feasibility of permit-specific conditions that would result in an average of 45 traps per trawl in LMA3, to achieve the same buoy line reduction.

The trawling-up measures included in this proposed rule were proposed by the states or by LMA3 ALWTRT fishing industry participants. Outside of waters exempted from trawling up requirements under the ALWTRP, an estimated 19 percent reduction in buoy line numbers would be achieved by the proposed trawling-up measures described on Table 1. Note that MEDMR proposed an option for lobstermen to use fewer traps per trawl using one buoy line in a manner resulting in the same line proportion of buoy lines to pots (four traps on a single buoy between three and six miles, eight trap per single

buoy between 6 and 12 miles). NMFS is not proposing this at this time because past gear modifications allowing more than three pots per buoy were rescinded due to comments that those gear configurations resulted in gear conflicts and safety concerns. Outside of three miles, this option would also require modifications to regulations on lobster gear configuration found at 50 CFR 697.21(b)(2) requiring trawls of more

than three traps to mark both ends of the trawl with buoys and radar reflectors. Although not proposed here, comments on this option are requested. Additionally, the proposed rule would require 45 traps per trawl in the Northeast LMA3 management area. This trawl configuration may pose logistic and safety concerns for a few smaller vessels permitted to fish in LMA3. Offshore lobster fishermen have

suggested that they would consider individual permit conditions requiring some vessels to fish more traps/trawl to ensure that the average traps/trawl fished in the area, and therefore, the buoy line numbers will be the same as that analyzed for the proposed rule. Reviewers are asked to provide comments on whether equivalencies implemented through fishing permit conditions should be considered.

TABLE 1—PROPOSED REGULATORY CRAB/LOBSTER NORTHEAST REGION BUOY LINE REDUCTION MODIFICATIONS TO THE ATLANTIC LARGE WHALE TAKE REDUCTION PLAN

Component	Area	Distance from shore if applicable	Proposed measure
Modify minimum traps per trawl requirements.	Maine state waters	Maine Exemption line to 3 nmi (5.56 km).	3 traps/trawl.
	Offshore Maine	3 nmi (5.56 km) to the 6 mi line ...	8 traps/trawl.
	All LMA1	6 mi line to 12 nmi (22.22 km)	15 traps/trawl.
	LMA2 and Outer Cape Cod	3–12 nmi (5.56–22.22 km)	15 traps/trawl.
	LMA1 and LMA2	>12 nmi (22.22 km)	25 traps/trawl.
Increase maximum trawl length to accommodate traps/trawl.	Northeast LMA3	45 traps/trawl.
	Northeast LMA3	Extend maximum trawl length to 1.75 nm (3.24 km).

Note: See 50 CFR 229.32 for delineations of regulated waters and associated terms, such as exempted waters. The “6-mile line” refers to an approximation, described in 50 CFR 229.32(a)(2)(ii).

Changes to Restricted Areas

The proposed measures, summarized in Table 2, would modify current Northeast Region restricted areas to allow commercial trap/pot fisheries to harvest lobster and crabs if they fish with ropeless gear, without persistent buoy lines. The proposed modifications would affect two existing seasonal restricted areas currently closed to fishing: the Massachusetts Restricted Area (50 CFR 229.32(c)(3)) and the Great South Channel Restricted Trap/Pot Area (50 CFR 229.32(c)(4)). However, no changes are proposed to the surface system requirements (buoys and radar reflectors required at either end of lobster trawls or bottom tending fixed gear) under the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA), 16 U.S.C. 5101 *et seq.* See 50 CFR 697.21. Therefore, fishermen harvesting lobster in these areas would need to get authorization from the appropriate state or Federal agency to be exempted from these surface marking requirements.

This measure is not expected to introduce substantial fishing effort into the currently restricted areas, and any exempted fishing authorization would require methods, monitoring, and reporting that minimize the possibility of impacts on large whales. The purpose of this measure is to encourage fishermen to participate in the development of ropeless fishing, to improve operational feasibility and accelerate the timeline for adoption

within commercial fishery operations. NMFS continues to prioritize ropeless fishing development and has initiated a pilot program to support ropeless experimentation and develop other innovative fishing gear technologies to reduce North Atlantic right whale entanglements in U.S. commercial fisheries as supported by fiscal year 2020 appropriations described in Senate Report 116–127. We anticipate that these efforts to facilitate and support the industry’s development of ropeless gear will continue, pending appropriation. Reviewers are asked to comment on this proposed measure.

Two new seasonal restricted areas that would allow harvest of lobster and Jonah crab using bottom trap/pot trawl gear but without the use of persistent buoy lines are also proposed and summarized in Table 2 and illustrated in Figure 1: (1) Offshore of Maine along the LMA1 and LMA3 border and (2) south of Cape Cod and Nantucket. The first proposed new seasonal lobster and crab trap/pot buoy line restricted area from October through January about 30 miles (48 km) offshore of Maine along the LMA1 and LMA3 border was discussed with MEDMR but was not included in their proposal to NMFS. This buoy line restricted area is proposed at 229.32(c)(6)(ii) to ensure that the risk reduction measures in LMA1 approach the regional target risk reduction of 60 percent. The amount of risk reduction relative to the economic impact of the restricted area may vary in

unpredictable ways during the restricted season. NMFS seeks comment as to whether restricted areas during certain months may have a disproportionately higher amount of economic impact. NMFS also seeks comment as to whether the proposed closure is necessary to achieve a sufficient level of risk reduction across the region or whether the buoy line closures should be excluded from the final rule. Additionally, as noted above and analyzed in the DEIS, while NMFS has included both proposed seasonal restricted areas in the proposed regulatory text below, NMFS has not yet made a final determination as to whether the LMA1 closure is necessary to meet the goal of a 60 percent risk reduction. As such, NMFS is also considering two alternative options regarding this requirement, and is seeking public comment on these two options as well as the proposed restricted area as set forth below:

Alternative Option 1–A. Invite Comment on not including the LMA1 Seasonal Restricted Area.

As an alternative to the proposed seasonal restricted areas, NMFS is also seeking comment on the option to not include the LMA1 seasonal restricted area. Commenters that believe this additional restricted area is not warranted to achieve PBR are encouraged to provide specific information or analysis in support of recommended removal of the restricted area from the proposed rule. If NOAA

receives information indicating that we can achieve the 60 percent risk reduction without the restricted area, we would consider not including the restricted area in the final rule. Additionally, if commenters believe that information will be available after issuance of the final rule on this topic, commenters should articulate the nature of that information, how the information might affect the decision, and propose a mechanism for evaluating that information in determining whether or not to continue with the restricted area.

Alternative Option 1–B: Invite Comment on not including the LMA1 Seasonal Restricted Areas Unless Certain Triggers are Met.

As an alternative to the proposed seasonal restricted areas, NMFS is also seeking comment on the option to modify the regulatory structure such that the Regional Administrator may implement the LMA1 closure if certain triggers are met in the future. This proposal would require the Regional Administrator to examine the available information in advance of October in any given year and determine whether the closure is necessary. Specifically, the Regional Administrator would implement the closure if he or she determines that the frequency of entanglements has not been reduced below 60 percent from the effective date of the final rule. NMFS is considering the following specific language to

implement this provision and is interested in any comments on this textual change at § 229.32(c)(6)(ii) Alternative 1–B.

The Regional Administrator may determine whether the frequency of entanglements from the trap/pot gear in the Northeast region has been reduced by 60 percent from [the effective date of this rule] within a time period that allows meaningful analysis. If the Regional Administrator determines that the frequency of such entanglements has not been reduced by 60 percent, then from October 1 to January 31, it shall be prohibited to fish with, set, or possess trap/pot gear in this area unless it is fished without buoy lines or with buoy lines that are stored on the bottom until they can be remotely released for hauling, or the trap/pot gear is stowed in accordance with § 229.2. Authorizations for fishing without buoy lines must be obtained if such fishing would not be in accordance with surface marking requirements of §§ 697.21 and 648.84.

The second proposed new seasonal lobster and crab trap/pot buoy line closure area was proposed by MADMF south of Cape Cod and Nantucket from February through April. These seasonal restricted areas closures are proposed as closures to buoy lines so that ropeless fishing for lobster and crab could occur with appropriate exemptions, as described above in discussion of

changes to closure current restricted areas.

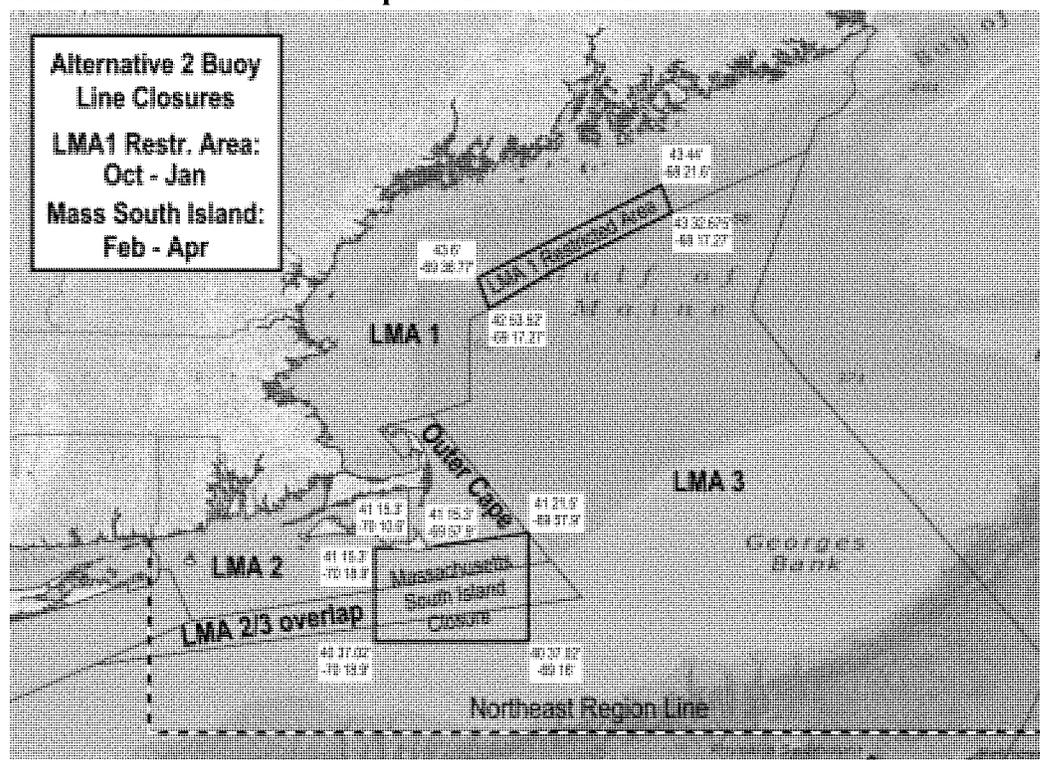
Rhode Island fishermen may also be affected by the Massachusetts South Island Restricted Area in LMA2, and a restriction of buoy lines was not included in the Rhode Island Division of Marine Fisheries (RIDMF) proposal. RIDMF instead proposed that LMA2 fishermen fish with two weak buoy lines (considered to be top 75 percent of the buoy line, allowing 25 percent chafing line where the line makes contact with the ocean floor) to achieve 60 percent risk reduction. Although weak buoy lines are analyzed within Alternative 3 in the DEIS, the Massachusetts South of Island closure was selected for proposed rulemaking due to the demonstrated value of the Massachusetts Restricted Area to North Atlantic right whale protection and recent use by right whales in the area south of Nantucket.

Through flexible state rulemaking, Massachusetts extends the current closure of state waters within the Massachusetts Restricted Area in May if whales remain. Taken together with line reduction measures and the two proposed buoy line closures, co-occurrence of trap/pot buoy lines with North Atlantic right whales would be reduced by an estimated 69 percent (Table 5.4, DEIS).

TABLE 2—PROPOSED REGULATORY CHANGES TO EXISTING NORTHEAST REGION RESTRICTED AREAS AND ADDITION OF TWO NEW AREAS PROHIBITING PERSISTENT BUOY LINES

Component	Proposed area	Measure
Northeast Region Lobster and Crab Trap/Pot Fishery seasonal closures to persistent buoy lines, open to harvest of lobster and Jonah crab using ropeless technology; Ropeless fishing would be allowed with appropriate state and Federal authorizations for exemption from Atlantic Coastal Fisheries Cooperative Management Act and the Magnuson-Stevens Fishery Conservation and Management Act surface marking requirements.	Massachusetts Restricted Area (50 CFR 229.32(c)(3)) and Great South Channel Restricted Trap/Pot Area (50 CFR 229.32(c)(4)).	Would change the trap/pot fishery restricted areas from complete fishing closures to closures to buoy lines. Would allow ropeless fishing for crab and lobster with appropriate state and Federal authorization for exemption from the remaining surface system marking requirements under the Atlantic Coastal Fisheries Cooperative Management Act and the Magnuson-Stevens Fishery Conservation and Management Act.
	New LMA1 Restricted Areas, across Maine Lobster Zones C/D/E.	October–January proposed restricted area; open to fishing with ropeless technology but closed to trap/pot fishing with persistent buoy lines. See Figure 1. Alternative 1–A No Closure. Alternative 1–B Open unless a determination is made by the Regional Administrator that the frequency of entanglements has not been reduced by 60 percent, in which case the area shall be open from October–January to fishing with ropeless technology but closed to trap/pot fishing with persistent buoy lines.
	New Massachusetts South Island Restricted Area.	February–April proposed restricted area; open to fishing with ropeless technology but closed to trap/pot fishing with persistent buoy lines. See Figure 1.

Figure 1 -- Northeast Region Trap/Pot Management Area, showing lobster management area boundaries and proposed LMA1 and Massachusetts South Island Seasonal Crab/Lobster Trap/Pot Restricted Areas



Gear Modifications To Include Weak Line or Weak Insertions in Buoy Lines

The proposed rule also identifies area-specific modifications to buoy lines to introduce weak rope or weak insertions breaking at 1,700 lbs. (771 kgs.) or less at various depths on the buoy line to increase the likelihood that a large whale would break the line prior to becoming entangled in a manner that causes a serious injury or mortality (Table 3). NMFS has confirmed with gear manufacturers that they can include one alternate color in three-strand buoy lines that are manufactured to break at less than 1,700 lbs. (771 kgs.) to distinguish them from strong line of the same diameter. Publication of this proposed rule would be an indicator of future market demand that may spur the production of weak line that can be visibly differentiated.

Weak insertions create places along the rope that have a breaking strength of 1,700 lbs. (771 kgs.) or less. The proposed regulations require a stipulation regarding the depths of weak insertions. Large whales including right whales appear to use the entire water column; therefore, encounters at depth can happen. We assume no risk reduction below the insertion. A large right whale encountering the rope above

the weak insertion should be able to break free of the gear below the insertion with a lesser chance of serious injury. The closer the distance between weak insertions, the greater the benefit to right whales, with an ideal interval proposed by some Team members of 40 ft. (12.19 m), the average length of a right whale.

The proposed weak rope and weak insertion measures included in the proposed rule are taken directly from state proposals. MEDMR is evaluating the breaking strength of weak insertion devices, and some that have effectively broken at or below 1,700 lbs (771 kgs) include: Use of an engineered rope designed to have a tensile strength of up to 1,700 lbs. (771 kgs.); spliced insertion into a buoy line of a 3 to 6 ft. (0.91 to 1.83 m) long length of rope engineered to break at 1,700 lbs. (771 kgs.); and insertion of a 3 to 6 ft. (0.91 to 1.83 m) length of South Shore Lobster Fishermen's Association sleeve, a hollow braided sleeve that can be quickly integrated into typical three strand $\frac{5}{16}$ and $\frac{3}{8}$ inch (0.79 and 0.95 cm) diameter buoy line. Preliminary results of MEDMR's evaluations can be found in their proposal in Appendix 3.2 of the DEIS. Fishermen continue to test additional weak insertion

configurations; therefore, additional options that demonstrate appropriate breaking strengths may be identified by the time of final rulemaking. The proposed rule requires inserts or weak line that has been demonstrated to break under forces greater than 1,700 lbs. (771 kgs.), but allows the Regional Administrator to approve new weak insertion devices as they are developed and proven effective to respond to the diversity in fishing practices and available materials across the Northeast Region.

The proposed requirements do not require weak insertions in the Maine exemption area because MEDMR will be requiring one insertion halfway down the buoy line in the exemption area through state regulations. The elements within the Preferred Alternative (Alternative 2) were selected because the DST estimated together they would achieve a greater than 60-percent risk reduction. The analysis includes Maine's intention to require a weak insertion in their exemption waters. The weak line and weak insertion modifications proposed below estimates that outside of the Maine exemption area, all buoy lines in the Northeast Region would be modified under the proposed rule and more than 26 percent

of the rope in crab and lobster buoy lines would be weakened to 1,700 lbs. (771 kgs.) or less. Planned state regulations would modify all buoy lines in Maine exempted waters so that an additional 31.7 percent of line would be equivalent to weak rope. If MEDMR does not implement weak insertion requirements in the exemption area, further modifications to the Plan may be needed to reduce risk of serious injury and mortality of North Atlantic right whales due to entanglement in the commercial Northeast Region lobster and crab trap/pot fisheries by 60 percent.

In addition to weak rope and weak insertions along the length of the buoy lines, the proposed rule would also modify the current weak link requirement at the buoy. The rule would allow fishermen the option of inserting the weak links (at current area-specific

strengths) where the surface system connects to the buoy line rather than requiring it at the buoy itself. This modification was requested by fishermen for operational reasons rather than risk reduction reasons. The change would not increase risk, and may allow a whale to break away from entire surface system, which can include multiple lines, buoys, and radar reflectors, rather than just releasing the buoys. This may have a positive benefits due to a reduction in entanglement complexity. Comments from fishermen and the public on this measure specifically are encouraged.

We propose modifying the buoy weak link to provide fishermen with two options, the current connection close to the buoy or a weak link connecting the base of the surface system to the single buoy line. Moving the weak link to the base of the surface system could be

required if there is information demonstrating this is a large risk reduction improvement. Finally, the non-preferred alternative in the DEIS (Alternative 3) considers removing the buoy weak link requirement for all buoy lines that would be required to have weak line or weak insertions farther down the buoy line. Under this configuration, a retained buoy could provide resistance that helps the buoy line to part lower down, or the buoy could pull the line away from the whale, increasing the possibility that it will fall from the whale. A retained buoy could also be helpful to large whale disentanglement responders, and buoys from commercial fisheries are usually required to be marked with vessel specific information that would provide information on the original location of entanglement. NMFS invites comments on all of these options.

TABLE 3—PROPOSED REGULATORY CHANGES TO REQUIRE WEAK ROPE, WEAK INSERTIONS ON BUOY LINES AND CHANGE TO WEAK LINK REQUIREMENT ON NORTHEAST REGION CRAB AND LOBSTER TRAP/POT BUOY LINES

Component	Area including distance from shore	Proposed measure
Weak line/Weak Insertion	From Maine exemption line to 3 nmi (5.56 km)	2 weak insertions, at 25 percent and 50 percent down buoy line.
	New Hampshire/Massachusetts/Rhode Island. From coast to 3 nmi (5.56 km).	1 weak insertion, at 50 percent down the buoy line.
	All Northeast Region. 3–12 nmi (5.56 km–22.22 km).	2 weak insertions, at 25 percent and 50 percent down line.
	LMA1, LMA2, and Outer Cape Cod. >12 nmi (22.22 km).	1 weak insertion, at 35 percent down the line.
	Northeast LMA 3	The top 75 percent of one buoy line weak.
Weak link placement option	Entire Northeast Region (Figure 1)	Allow option to place weak link as a connection between the surface system and the single buoy line.

Gear Marking Changes

Finally, the proposed rule would modify current gear marking requirements, introducing colored marks that identify state of permit issuance, as well as a 6-inch (15.24 cm) mark that distinguishes Northeast Region lobster and crab trap trawls in Federal waters from state waters. The rule would also add a 3 ft. (0.91 m) long mark within 2 fathoms of the buoys to increase the possibility of detection and identification to state fishery from vessels and aerial survey aircraft. Proposed modifications are summarized in Table 4. The gear markings are based on proposals received from or discussed with New England States. Maine has already published gear marking

requirements analogous to these measures, requiring gear marking on every Maine permitted lobster buoy line, effective in September 2020. Maine’s gear marks for Federal waters are mirrored in these regulations. Multiple marking methods would be allowed including paint, tape, or colored rope insertions.

While existing gear marking requirements have increased the amount of retrieved gear with marks, they do not provide sufficient entanglement location information. The proposed gear marking scheme would increase the number of marks present by approximately 56 percent (not including Maine exempt waters, which are regulated under state requirements and will substantially

increase the number of marked lobster buoy lines there), increasing the chances that gear will be recovered with visible marks. The proposed gear marking would not impact the probability of whales becoming entangled in commercial fishing gear nor would they affect the severity of an entanglement should one occur. However, the markings would increase the information available regarding the fishery and state of origin of large whale entanglements to aid the efforts of NMFS and the ALWTRT in assessing, and if needed reducing, entanglements in U.S. commercial fisheries that cause mortalities and serious injuries of North Atlantic right whales and other large whales.

TABLE 4—PROPOSED REGULATORY CHANGES TO GEAR MARKING ON NORTHEAST CRAB AND LOBSTER TRAP/POT BUOY LINES

Area	Proposed gear marking measure
Entire Northeast Management Area (see figure 1) except Maine exemption area.	3-ft long state-specific mark (see color below) within 2 fathoms of the buoy. In Federal waters, an additional 6-inch green mark within 1 ft. of 3-ft mark.
Maine Exemption Area	3-ft long mark within 2 fathoms of the buoy. One or two additional 1-ft marks (depth dependent) through state regulation only.
Maine Non-Exempt	Purple. Three 1-ft marks: At top, middle and bottom of line. In Federal waters, an additional 6-inch green buoy line mark within 2 fathoms of buoy.
New Hampshire	Yellow. In state waters: Two 1-ft marks in the top half and bottom half of buoy line. Beyond state waters, three 1-ft marks: At top, middle and bottom of line. In Federal waters, an additional 6-inch green mark within 1 ft. of 3-ft mark within 2 fathoms of buoy.
Massachusetts	Red. In state waters: Two 1-ft marks in the top half and bottom half of buoy line. Beyond state waters three 1-ft marks: At top, middle and bottom of line. In Federal waters, an additional 6-inch green mark within 1 ft. of 3-ft mark within 2 fathoms of buoy.
Rhode Island	Silver/Gray. In state waters: Two 1-ft marks in the top half and bottom half of buoy line. Beyond state waters three 1-ft marks at top, middle and bottom of line. In Federal waters, an additional 6-inch green mark within 1 ft. of 3-ft mark within 2 fathoms of buoy.
LMA 3	Retain Black. In Federal waters add a 3-ft long mark within 2 fathoms of the buoy, and an additional 6-inch green mark within 1 ft. of 3-ft mark within 2 fathoms of buoy.

Addition to Definitions

To ensure clarity related to the management areas that are referenced but were developed for the American lobster fishery, a definition for “Lobster Management Area” is provided, citing the Atlantic Coastal Fisheries Cooperative Management Act regulations at 50 CFR 697.18.

For clarity related to proposed changes in weak link and gear marking requirements, the proposed rule would add a definition for “surface system” to the definitions in § 229.2.

Change in the Maximum Length of a Lobster Trap Trawl

In addition to changes to 50 CFR part 229, the proposed rule would revise Federal regulations implemented under the Atlantic State Marine Fisheries Commission’s Interstate Fishery Management Plan for Lobster at 50 CFR 697.21. The proposed modification would increase the maximum length of a lobster trap trawl from 1.5 nm (2.78 km) to 1.75 nm (3.24 km) in LMA3 as measured from radar reflector to radar reflector, to accommodate a proposed increase in the minimum number of traps per trawl in LMA3.

Risk Reduction Target of 60 Percent

The proposed changes are intended to achieve a regional risk reduction target of at least 60 percent within the Northeast Region lobster and Jonah crab trap/pot fisheries. The Team will be convened to develop recommendations to modify the Plan to reduce risk in other U.S. Atlantic fisheries in meetings in 2021. A 60 percent risk reduction across U.S. commercial fisheries is the minimum that NMFS believes is necessary to reduce the incidental

mortalities and serious injuries to below the potential biological removal level for right whales (0.9 potential biological removal level to 0.9 right whales (see Section 2.1.5 of the DEIS) based on documented serious injuries and mortalities. This rulemaking is intended to reduce the risk of entanglement within the Northeast Region lobster and Jonah crab fisheries by 60 percent, which fish about 93 percent of the buoy lines that occur in areas in the United States where right whales occur. NMFS will develop measures to reduce the risk within other fisheries by a similar amount so that the risk reduction target of 60 percent across U.S. commercial fisheries is achieved. NMFS seeks comment as to whether the allocation of risk reduction in the proposed rule is appropriate relative to other fixed gear fisheries (e.g., gillnets) in the region that contribute to the risk of entanglement. Commenters that believe a lower target for risk reduction is warranted should provide specific information or analysis in support of any recommended level.

Classification

The NMFS Assistant Administrator has determined that this proposed rule is consistent with the Plan and the provisions of the Marine Mammal Protection Act, the Atlantic Coastal Fisheries Cooperative Management Act, and other applicable law, subject to further consideration after public comment.

National Environmental Policy Act

NMFS prepared a DEIS for this proposed rule that discusses the potential impacts of proposed changes to the ALWTRP on the environment. In addition to the status quo (Alternative

1), two alternatives are analyzed, Alternative 2 (preferred and the basis of this proposed rule) and Alternative 3. Alternatives 2 and 3 would both modify existing seasonal restricted areas from closure areas to areas closed to persistent buoy lines rather than closed to harvesting lobster and crab, reduce the number of vertical buoy lines fished in northeast lobster and crab trap/pot fisheries, deploy weak rope to allow whales to break free before being killed or seriously injured, seasonally close some areas to crab and lobster trap/pot fishing with persistent buoy lines, and increase gear marking requirements across the Northeast Region lobster and crab trap/pot fisheries. Alternative 2 would reduce buoy lines through an increase in minimum traps/trawl based on area fished. Alternative 3 would reduce lines by providing a line allocation in Federal waters capped at half the lines fished in 2017. While Alternative 2 weak buoy line provisions allow the use of a small number of weak insertions, under Alternative 3 those insertions would be required every 40 ft. along the buoy line or engineered weak rope would be required. Alternative 3 has more and larger seasonal restricted areas closed to buoy lines. An analysis of the impacts of the Federal portion of the two action alternatives estimates that Alternative 2 would reduce the co-occurrence of North Atlantic right whales and buoy lines in these fisheries by 69 percent and would modify 26 percent of the rope in vertical buoy lines to be weakened lines. Co-occurrence of humpback and fin whales with vertical lines would also be reduced by 19 and 27 percent, respectively. Alternative 3 would reduce the co-occurrence of North Atlantic right whales by 86

percent or greater and would modify 75 percent of rope in remaining vertical buoy lines to be weakened lines. Co-occurrence of fin and humpback whales with buoy lines would also be reduced by over 56 percent and 58 percent, respectively, in Alternative 3. Because of the extensive gear marking and weak rope provisions under both alternatives, 3,970 vessels would be affected. The estimated annualized compliance costs of each action alternative are \$5.7 to \$12.3 million for Alternative 2 and \$16.3 to \$31.8 million for Alternative 3. A copy of the DEIS is available in the docket or from NMFS (see ADDRESSES). Reviewers are asked to comment on and identify support for Alternative 1, 2 or 3.

Executive Order 12866, Regulatory Planning and Review, and Executive Order 13771, Reducing Regulation and Controlling Regulatory Costs

This proposed rule has been determined significant for the purposes of Executive Order 12866. This proposed rule is expected to be an Executive Order 13771 regulatory action. Depending on the assumptions used, the estimated total cost of this rule over the first six years of implementation, in 2020 dollars, is between \$24.5 and \$53.5 million.

Regulatory Flexibility Act

NMFS prepared an IRFA as required by section 603 of the Regulatory Flexibility Act (RFA). The IRFA describes the economic impact this proposed rule, if adopted, would have on small entities. A description of the action, why it is being considered, and the legal basis for this action are contained at the beginning of this section in the preamble and in the SUMMARY section of the preamble. A copy of this analysis is available in the docket or from NMFS (see ADDRESSES), and a summary follows.

Description and Estimate of Number of Small Entities To Which This Proposed Rule Would Apply

For RFA purposes only, NMFS has established a small business size standard for businesses, including their affiliates, whose primary industry is commercial fishing (see 50 CFR 200.2). A business primarily engaged in

commercial fishing (North American Industry Classification System (NAICS) code 11411) is classified by NMFS as including those businesses, including their affiliates, whose primary industry is commercial fishing and who have \$11 million or less in annual gross receipts. This standard applies to all businesses classified under NAICS code 11411 for commercial fishing, including all businesses classified as commercial finfish fishing (NAICS 114111), commercial shellfish fishing (NAICS 114112), and other commercial marine fishing (NAICS 114119) businesses. Data are not available to ascertain non-ownership interests needed to confirm the Small Business Act definition of “affiliations;” therefore, the Social Sciences Branch (SSB) of the NMFS Northeast Fisheries Science Center created an affiliated database. There are three major components of this dataset: Vessel affiliation information, landing values by species, and vessel permits. All federally permitted vessels in the Northeast Region from 2016 to 2018 are included in this dataset. Vessels are affiliated into entities according to common owners. The entity definition used by the SSB uses only unique combinations of owners.

Since this proposed regulation applies only to the crab and lobster pot/trap vessels in the Northeast Region, entities that possess one or more of these permits are evaluated. For each affiliation, the revenues from all member vessels of the entity are summed into affiliation revenue in each year. On December 29, 2015, NMFS issued a final rule establishing a small business size standard of \$11 million in annual gross receipts for all businesses primarily engaged in the commercial fishing industry (NAICS 11411) for RFA compliance purposes only. The \$11 million standard became effective on July 1, 2016. Thus, the RFA defines a small business in the lobster fishery as a firm that is independently owned and operated with receipts of \$11 million or less annually. Based on this size standard, if the three-year average (2016–2018) affiliation revenue is greater than \$11 million, the fishing business is considered to be a large entity, otherwise it is a small entity.

Within the Northeast Fisheries Science Center (NEFSC) SSB database,

1,591 distinct entities were identified as regulated entities. Using landings data, four of these entities are considered large entities. Because the regulations will also affect fishermen holding only state permits, the vertical buoy line estimates within the NMFS/IEC Co-Occurrence model were used to identify an addition estimate of 1,913 active vessels fishing in state waters that would be regulated by the proposed rule. In total, therefore, there are 3,504 regulated entities.

While we do not have data to determine the dependence of state permitted vessels on lobster landings, if they are analogous to the small entities fishing under Federal permits, they are likely to be dependent on lobster landings, as further described below. To determine the number of impacted entities within the NEFSC data, we identified whether one or more members of an affiliation landed lobster in 2018. These are entities likely to be impacted by the proposed regulations. The determination of whether an entity is a large or small entity is based on three-year average affiliation revenue from 2016 to 2018. Based on these characteristics, we identified 1,591 distinct entities as regulated entities, including 259 entities with no fishing revenue in 2018, and 111 entities (one large, 110 small) with no 2018 lobster landings. That is, there are 1,221 federally permitted vessels that would be impacted by the proposed rule because at least one vessel in the entity landed lobster in the past year (Table 5). Only three of the affected entities would be considered large entities; 1,218 are Federally-permitted small entities. We assume that in addition to those, the 1,912 vessels in state waters would also be impacted, for a total of 3,130 impacted small entities.

As estimated in Chapter 9 of the DEIS, Table 5 displays the average profit for all large and small entities, compared to their mean total revenue. Results indicate the profitability for large entities is 1.77 percent and for small entities is 18.48 percent. As such, we could conclude that the action would not create more significant economic impact on small entities compared to large entities.

TABLE 5—PROFITABILITY OF LARGE AND SMALL ENTITIES

	Mean profit	Mean total revenue	Profitability (%)
Large Entity	\$469,784	\$26,485,600	1.77
Small Entity	52,235	282,586	18.48

Under Alternative Two, a few measures are proposed to reduce the probability of serious injury and mortality of North Atlantic right whales including weak ropes, minimum trawl length requirement, and restricted areas. A gear marking requirement is also proposed to increase the chance of threat identification. All these measures generate a series of compliance costs for small entities.

As discussed in Chapter 6 of the DEIS, we assume the rulemaking cycle is six years, considered the approximate replacement time for buoy lines. Table 6 displays the compliance costs for all affected entities from Year 1 to Year 6.

Year 0 is the status quo, so the compliance cost is zero, and we do not include it in the table. The discount rate of three percent and seven percent are used for the annualized value calculation. Weak rope only generate costs in Year 1, while gear marking needs to be replaced every year. Trawling up and restricted area measures have costs in the subsequent years due to the catch reduction impacts. At seven percent discount rate, the trawling up measures have the highest annual cost of \$2.8 to \$9.4 million. Gear marking would cost \$2.5 million each year. Weak rope and restricted areas (seasonal buoy line

closures) cost less than half a million dollars annually. The total annual cost of all measures ranges from \$5.9 million to \$12.8 million. If applied to roughly 3,100 affected small entities, each entity would have to bear a compliance cost of \$1,900 to \$4,100 per year for six years. If we are applying a three percent discount rate, the final cost for each vessel would be around \$1,700 to \$3,600 per year. In terms of realized Year 1 costs, compliance costs would range between \$2,200 and \$5,000 but would be lower in Years 2–6. The Year 1 costs would result in an estimated reduction in profit ranging from 4.3 percent to 9.5 percent.

TABLE 6—YEARLY COMPLIANCE COST OF PREFERRED ALTERNATIVE

Year	Gear marking	Weak rope	Trawling up lower	Trawling up upper	Restricted area lower	Restricted area upper	Total lower	Total upper
1	\$2,017,283	\$2,152,497	\$2,660,792	\$10,957,354	\$106,259	\$315,300	\$6,936,831	\$15,442,434
2	2,017,283	0	4,239,722	12,236,593	106,259	315,300	6,363,264	14,569,176
3	2,017,283	0	3,179,791	9,517,350	106,259	315,300	5,303,333	11,849,933
4	2,017,283	0	2,119,861	6,798,107	106,259	315,300	4,243,403	9,130,690
5	2,017,283	0	1,059,930	4,078,864	106,259	315,300	3,183,472	6,411,447
6	2,017,283	0	0	1,359,621	106,259	315,300	2,123,542	3,692,204
PV	12,103,698	2,152,497	13,260,096	44,947,889	637,554	1,891,800	28,153,845	61,095,884
AV (3%)	2,234,312	397,346	2,447,781	8,297,268	117,691	349,222	5,197,129	11,278,147
AV (7%)	2,539,305	451,585	2,781,912	9,429,878	133,756	396,892	5,906,558	12,817,660

Notes: 1. Year 1 to year 6 values are in 2017 dollars.
 2. PV represents net present value of year 1 to year 6, also in 2017 dollars.
 3. AV represents annualized value of the net present value. It is an equalized yearly cost during the 6-year time period with 3% and 7% discount rate.

Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements

Paperwork Reduction Act

The gear marking requirements in this proposed rule constitute a revision to the information collection burden estimates, subject to review and approval by the Office of Management and Budget (OMB) under the Paperwork Reduction Act (PRA), OMB Control Number 0648–0364. The DEIS includes two alternatives which both include gear marking modifications and on which NMFS is soliciting comment here.

Comments are requested on assumptions made in estimating the public reporting burden associated with gear marking, including proposed revisions. In addition to new marks that would be required under this proposed rulemaking, we have revised past assumptions that fishermen replace about 20 percent of their buoy lines each year and therefore replace 20 percent of the gear marks annually. Based on new information from a NMFS gear specialist, burden estimates now include an assumption that fishermen will recreate every mark each year. The estimated time required to mark buoy lines has also increased to account for the new marks required and based on

new information that the estimated time to make each mark is about 8.4 minutes for each mark. We estimate an average of 334.4 marks for each vessel, for a total reporting burden of an average of 47 hours per year for each of the 1,670 vessels, including the time and costs in acquiring gear marking materials. The total labor cost is estimated to be \$1,963,949. Previous burden estimates assumed that 3,672 fishermen (including Maine fishermen outside of the Maine exempted waters) would replace an average of about 47 marks per vessel each year, with each mark taking 5 minutes, and a total burden cost estimate of \$199,540 per year.

Reviewers are asked to comment and provide data on whether this proposed revision to the collection of information is necessary for the proper performance and function of the agency, including: The practical utility of the information; the accuracy of the burden estimate; the opportunities to enhance the quality, utility, and clarity of the information to be collected; and the ways to minimize the burden of the collection of information, including the use of automated collection techniques or other forms of information technology. Send comments on these or any other aspects of the collection of information to the NMFS Greater Atlantic Region at the ADDRESSES above. Notwithstanding

any other provision of the law, no person is required to respond to, and no person shall be subject to penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information is conducted under OMB Control Number 0648–0364.

Federal Rules Which May Duplicate, Overlap, or Conflict With the Proposed Rule

This action does not duplicate, overlap, or conflict with any other Federal rules.

Description of Significant Alternatives to the Proposed Action Which Accomplish the Stated Objectives of Applicable Statutes and Which Minimize Any Significant Economic Impact on Small Entities

This rule proposes to amend the ALWTRP to reduce the incidental mortality and serious injury to North Atlantic right whales (*Eubalaena glacialis*), humpback (*Megaptera Novaeangliae*) and fin whales (*Balaenoptera physalus*) in the northeast commercial lobster and crab trap/pot fisheries to meet the goals of the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA). In addition, this action also proposes a small revision to Federal regulations

implemented under the Atlantic State Marine Fisheries Commissions' Interstate Fishery Management Plan for Lobster to increase the maximum length of a lobster trap trawl groundline to accommodate a gear configuration modification proposed in the Plan amendment.

Because incidental entanglement-related serious injury and mortality of North Atlantic right whales is above PBR, and the population is declining, the primary purpose of the proposed modifications is to reduce mortality and serious injury of right whales incidental to northeast U.S. crab and lobster trap/pot gear to below by greater than 60 percent. A reduction in entanglement incidents and serious injuries would also reduce sub-lethal impacts to right whales. NMFS estimated that to reduce mortality and serious injury to below PBR, entanglement risk across U.S. fisheries needs to be reduced by 60 to 80 percent. Non-preferred alternatives would likely not accomplish these objectives for this action or would be less cost effective.

Alternative 1 (status quo) would not modify the Plan or reduce the risk of mortality or serious injury of right whales to below its PBR level as required by the MMPA.

Alternative 3 would reduce the amount of line in the water via a line cap allocation to 50 percent of the lines fished in 2017, implemented in Federal and non-exempt waters except in LMA3. An increase in the minimum traps per trawl requirement would be implemented in LMA3. Under this alternative, existing closures to fishing would be modified to be closed to fishing with persistent buoy lines. The Massachusetts Bay Restricted area would also be extended with a soft closure through May, opening if surveys demonstrate that whales have left the restriction area. Three new seasonal restricted areas would allow ropeless fishing but be closed to buoy lines, including a longer restricted period for the LMA1 Restricted Area and a summer buoy line restriction in an area north of George's Bank at Georges Basin. Two alternative buoy line restricted area options are analyzed south of Cape Cod. Additional measures in Alternative 3 include conversion of a portion of the top 75 percent of all lobster and crab trap/pot vertical buoy lines to weaker rope with a maximum breaking strength of 1,700 lbs. (771.1 kgs.). The Alternative also includes a more robust gear marking requirement that differentiates buoy lines by state and fishery and expands into areas previously exempt from gear marking.

Alternative 3 demonstrated better risk reduction than Alternative 2, but at a much greater cost. The DST estimated the preferred alternative proposed in this rulemaking would achieve over 60 percent risk reduction for lobster and crab trap/pot buoys in the Northeast Region, within the target established for reaching right whale PBR. The Co-Occurrence model suggested that co-occurrence would be reduced by over 69 percent and that more than 26 percent of the buoy lines in the regulated area would be modified to weak lines. The estimated cost of bringing gear into compliance and lost landings in the first year ranges from \$6.04 to \$14.5 million.

The DST estimated that Alternative 3 achieved a risk reduction score of nearly 70 percent, and the Co-occurrence Model estimated a co-occurrence reduction of greater than 86 percent. This alternative would increase the likelihood of reducing mortality and serious injury to below PBR for right whales even when taking into account cryptic mortality (estimated but unseen). However, the estimated costs associated with Alternative Three are substantially higher; ranging from \$35.0 million to \$53.6 million in first year implementation costs.

Alternative 2 was selected as the preferred alternative and is proposed for rule making because it addresses the Purpose and Need for Action stated in this DEIS, is made up primarily of measures proposed by New England states with extensive input from fishing industry stakeholders who will be directly affected by the measures, and includes measures that will help to conserve large whales by reducing the potential for and severity of interactions with commercial fishing gear that may lead to mortalities and serious injuries. In addition, NMFS believes that its preferred alternative achieves these goals while reducing, to the extent possible, the adverse socioeconomic impacts of the rule. On this basis, NMFS believes that Alternative 2 (Preferred) offers the best option for achieving compliance with MMPA requirements.

Coastal Zone Management

NMFS has determined that this action is consistent to the maximum extent practicable with the approved coastal management programs of the U.S. Atlantic coastal states. This determination has been submitted for review by the responsible state agencies under section 307 of the Coastal Zone Management Act.

Federalism

This proposed rule contains policies with federalism implications as that term is defined in Executive Order 13132. Accordingly, the Assistant Secretary for Legislative and Intergovernmental Affairs will provide notice and invite for appropriate participation in the proceedings for the proposed action to the appropriate official(s) of affected state, local, and/or tribal governments.

Endangered Species Act

An Endangered Species Act Section 7 consultation has been initiated and will be completed prior to publication of a final rule. Previously, NMFS completed an ESA Section 7 consultation on the implementation of the Plan on July 15, 1997, and concluded that the action was not likely to adversely affect any ESA-listed species under NMFS jurisdiction. Three subsequent consultations were concluded in 2004, 2008, 2014, and 2015, when NMFS amended the Plan. NMFS, as both the action agency and the consulting agency, reviewed the changes and determined that the measures as revised through rulemaking would not affect ESA-listed species under NMFS jurisdiction in a manner that had not been previously considered.

References

- Knowlton, A.R., J. Robbins, S. Landry, H.A. McKenna, S.D. Kraus, and T.B. Werner. 2016. Effects of fishing rope strength on the severity of large whale entanglements. *Conserv Biol* 30:318–328.
- Pace, R.M., 3rd, P.J. Corkeron, and S.D. Kraus. 2017. State-space mark-recapture estimates reveal a recent decline in abundance of North Atlantic right whales. *Ecology and Evolution* 7:8730–8741.

List of Subjects

50 CFR Part 229

Administrative practice and procedure, Confidential business information, Endangered species, Fisheries, Marine mammals, Reporting and recordkeeping requirements.

50 CFR Part 697

Fisheries, Fishing.

Dated: December 22, 2020.

Samuel D. Rauch, III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR parts 229 and 697 are proposed to be amended as follows:

PART 229—AUTHORIZATION FOR COMMERCIAL FISHERIES UNDER THE MARINE MAMMAL PROTECTION ACT OF 1972

■ 1. The authority citation for 50 CFR part 229 continues to read as follows:

Authority: 16 U.S.C. 1361 *et seq.*; § 229.32(f) also issued under 16 U.S.C. 1531 *et seq.*

■ 2. In § 229.2, add definitions for “Lobster Management Area” and “Surface system” in alphabetical order to read as follows:

§ 229.2 Definitions.

* * * * *

Lobster Management Area as used in this part means the management areas defined in the American Lobster Fishery regulations found at § 697.18 of this title.

* * * * *

Surface system, with reference to trap/pot and fixed gillnet gear, includes

the components at the sea surface to identify the presence of stationary bottom fishing gear, and includes buoys, radar reflectors, and high flyers as well as the rope that connect these components to the vertical buoy line that connects to the bottom gear.

* * * * *

■ 3. Revise § 229.32 to read as follows:

§ 229.32 Atlantic large whale take reduction plan regulations.

(a) *Purpose and scope*—(1) *Whales and fixed gear fisheries*. The purpose of this section is to implement the Atlantic Large Whale Take Reduction Plan to reduce incidental mortality and serious injury of fin, humpback, and right whales in specific Category I and Category II commercial fisheries from Maine through Florida. Specific Category I and II commercial fisheries within the scope of the Plan are identified and updated in the annual List of Fisheries. The measures

identified in the Atlantic Large Whale Take Reduction Plan are also intended to benefit minke whales, which are not designated as a strategic stock, but are known to be taken incidentally in gillnet and trap/pot fisheries. The gear types affected by this plan include gillnets (*e.g.*, anchored, drift, and shark) and traps/pots. The Assistant Administrator may revise the requirements set forth in this section in accordance with paragraph (i) of this section.

(2) *Regulated waters*—(i) *U.S. Atlantic waters*. The regulations in this section apply to all U.S. waters in the Atlantic except for the areas exempted in paragraph (a)(3) of this section.

(ii) *Six-mile line*. The six-mile line referred to in paragraph (c)(2)(iv) of this section is a line connecting the following points (Machias Seal to Provincetown):

TABLE 1 TO PARAGRAPH (a)(2)(ii)

44°31.98' N lat., 67°9.72' W long (Machias Seal)
44°3.42' N lat., 68°10.26' W long (Mount Desert Island)
43°40.98' N lat., 68°48.84' W long (Matinicus)
43°39.24' N lat., 69°18.54' W long (Monhegan)
43°29.4' N lat., 70°5.88' W long (Casco Bay)
42°55.38' N lat., 70°28.68' W long (Isle of Shoals)
42°49.53' N lat., 70°32.84' W long
42°46.74' N lat., 70°27.70' W long
42°44.18' N lat., 70°24.91' W long
42°41.61' N lat., 70°23.84' W long
42°38.18' N lat., 70°24.06' W long
42°35.39' N lat., 70°25.77' W long
42°32.61' N lat., 70°27.91' W long
42°30.00' N lat., 70°30.60' W long
42°17.19' N lat., 70°34.80' W long
42°12.48' N lat., 70°32.20' W long
42°12.27' N lat., 70°25.98' W long
42°11.62' N lat., 70°16.78' W long
42°12.27' N lat., 70°10.14' W long
42°12.05' N lat., 70°54.26' W long
42°11.20' N lat., 70°17.86' W long
42°09.55' N lat., 69°58.80' W long (Provincetown)

(iii) *Maine pocket waters*. The pocket waters referred to in paragraph (c)(2)(iv) of this section are defined as follows:

TABLE 2 TO PARAGRAPH (a)(2)(iii)

West of Monhegan Island in the area north of the line 43°42.17' N lat., 69°34.27' W long and 43°42.25' N lat., 69°19.3' W long
East of Monhegan Island in the area located north of the line 43°44' N lat., 69°15.08' W long and 43°48.17' N lat., 69°8.02' W long
South of Vinalhaven Island in the area located west of the line 43°52.31' N lat., 68°40' W long and 43°58.12' N lat., 68°32.95' W long
South of Bois Bubert Island in the area located northwest of the line 44°19.27' N lat., 67°49.5' W long and 44°23.67' N lat., 67°40.5' W long

(3) *Exempted waters*—(i) *COLREGS demarcation line*. The regulations in this section do not apply to waters landward of the 72 COLREGS demarcation lines (International Regulations for Preventing Collisions at

Sea, 1972), as depicted or noted on nautical charts published by the National Oceanic and Atmospheric Administration (Coast Charts 1:80,000 scale), and as described in 33 CFR part 80 with the exception of the COLREGS

lines for Casco Bay (Maine), Portsmouth Harbor (New Hampshire), Gardiners Bay and Long Island Sound (New York), and the State of Massachusetts.

(ii) *Other exempted waters*—(A) *Maine*. The regulations in this section

do not apply to waters landward of a line connecting the following points (Quoddy Narrows/U.S.-Canada border

to Odiornes Pt., Portsmouth, New Hampshire):

TABLE 3 TO PARAGRAPH (a)(3)(ii)(A)

44°49.67' N lat., 66°57.77' W long. (R N "2", Quoddy Narrows)
 44°48.64' N lat., 66°56.43' W long. (G "1" Whistle, West Quoddy Head)
 44°47.36' N lat., 66°59.25' W long. (R N "2", Morton Ledge)
 44°45.51' N lat., 67°02.87' W long. (R "28M" Whistle, Baileys Mistake)
 44°37.70' N lat., 67°09.75' W long. (Obstruction, Southeast of Cutler)
 44°27.77' N lat., 67°32.86' W long. (Freeman Rock, East of Great Wass Island)
 44°25.74' N lat., 67°38.39' W long. (R "2SR" Bell, Seahorse Rock, West of Great Wass Island)
 44°21.66' N lat., 67°51.78' W long. (R N "2", Petit Manan Island)
 44°19.08' N lat., 68°02.05' W long. (R "2S" Bell, Schoodic Island)
 44°13.55' N lat., 68°10.71' W long. (R "8BI" Whistle, Baker Island)
 44°08.36' N lat., 68°14.75' W long. (Southern Point, Great Duck Island)
 43°59.36' N lat., 68°37.95' W long. (R "2" Bell, Roaring Bull Ledge, Isle Au Haut)
 43°59.83' N lat., 68°50.06' W long. (R "2A" Bell, Old Horse Ledge)
 43°56.72' N lat., 69°04.89' W long. (G "5TB" Bell, Two Bush Channel)
 43°50.28' N lat., 69°18.86' W long. (R "2 OM" Whistle, Old Man Ledge)
 43°48.96' N lat., 69°31.15' W long. (GR C "PL", Pemaquid Ledge)
 43°43.64' N lat., 69°37.58' W long. (R "2BR" Bell, Bantam Rock)
 43°41.44' N lat., 69°45.27' W long. (R "20ML" Bell, Mile Ledge)
 43°36.04' N lat., 70°03.98' W long. (RG N "BS", Bulwark Shoal)
 43°31.94' N lat., 70°08.68' W long. (G "1", East Hue and Cry)
 43°27.63' N lat., 70°17.48' W long. (RW "WI" Whistle, Wood Island)
 43°20.23' N lat., 70°23.64' W long. (RW "CP" Whistle, Cape Porpoise)
 43°04.06' N lat., 70°36.70' W long. (R N "2MR", Murray Rock)
 43°02.93' N lat., 70°41.47' W long. (R "2KR" Whistle, Kittery Point)
 43°02.55' N lat., 70°43.33' W long. (Odiornes Pt., Portsmouth, New Hampshire)

(B) *New Hampshire*. New Hampshire State waters are exempt from the minimum number of traps per trawl

requirement in paragraph (c)(2)(iv) of this section. Harbor waters landward of

the following lines are exempt from all the regulations in this section.

TABLE 4 TO PARAGRAPH (a)(3)(ii)(B)

A line from 42°53.691' N lat., 70°48.516' W long. to 42°53.516' N lat., 70°48.748' W long. (Hampton Harbor)
 A line from 42°59.986' N lat., 70°44.654' W long. to 42°59.956' N, 70°44.737' W long. (Rye Harbor)

(C) *Rhode Island*. Rhode Island State waters are exempt from the minimum number of traps per trawl requirement

in paragraph (c)(2)(iv) of this section. Harbor waters landward of the following

lines are exempt from all the regulations in this section.

TABLE 4 TO PARAGRAPH (a)(3)(ii)(C)

A line from 41°22.441' N lat., 71°30.781' W long. to 41°22.447' N lat., 71°30.893' W long. (Pt. Judith Pond Inlet)
 A line from 41°21.310' N lat., 71°38.300' W long. to 41°21.300' N lat., 71°38.330' W long. (Ninigret Pond Inlet)
 A line from 41°19.875' N lat., 71°43.061' W long. to 41°19.879' N lat., 71°43.115' W long. (Quonochontaug Pond Inlet)
 A line from 41°19.660' N lat., 71°45.750' W long. to 41°19.660' N lat., 71°45.780' W long. (Weekapaug Pond Inlet)
 A line from 41°26.550' N lat., 71°26.400' W long. to 41°26.500' N lat., 71°26.505' W long. (Pettaquamscutt Inlet)

(D) *New York*. The regulations in this section do not apply to waters landward of a line that follows the territorial sea baseline through Block Island Sound (Watch Hill Point, RI, to Montauk Point, NY).

(E) *Massachusetts*. The regulations in this section do not apply to waters landward of the first bridge over any embayment, harbor, or inlet in Massachusetts. The following Massachusetts State waters are exempt from the minimum number of traps per trawl requirement in paragraph (c)(2)(iv) of this section:

(1) *Exempt waters of Massachusetts Bay and Outer Cape*. Heading From the New Hampshire border to 70° W longitude south of Cape Cod, waters in EEZ Nearshore Management Area 1 and the Outer Cape Lobster Management Area (as defined in the American Lobster Fishery regulations under § 697.18 of this title), from the shoreline to 3 nautical miles from shore, and including waters of Cape Cod Bay southeast of a straight line connecting 41°55.8' N lat., 70°8.4' W long. and 41°47.2' N lat., 70°19.5' W long.

(2) *Exempt waters of southern Massachusetts*. Heading From 70° W longitude south of Cape Cod to the Rhode Island border, all Massachusetts State waters in EEZ Nearshore Management Area 2 and the Outer Cape Lobster Management Area (as defined in the American Lobster Fishery regulations under § 697.18 of this title), including Federal waters of Nantucket Sound west of 70° W longitude.

(F) *South Carolina*. The regulations in this section do not apply to waters landward of a line connecting the following points from 32°34.717' N lat.,

80°08.565' W long. to 32°34.686' N lat., 80°08.642' W long. (Captain Sams Inlet).

(4) *Sinking groundline exemption.*

The fisheries regulated under this section are exempt from the requirement to have groundlines composed of sinking line if their groundline is at a depth equal to or greater than 280 fathoms (1,680 ft or 512.1 m).

(5) *Net panel weak link and anchoring exemption.* The anchored gillnet fisheries regulated under this section are exempt from the requirement to install weak links in the net panel and anchor each end of the net string if the float-line is at a depth equal to or greater than 280 fathoms (1,680 ft or 512.1 m).

(6) *Island buffer.* Those fishing in waters within 1/4 nautical miles of the following Maine islands are exempt from the minimum number of traps per trawl requirement in paragraph (c)(2)(iv) of this section: Monhegan Island, Matinicus Island Group (Metinic Island, Small Green Island, Large Green Island, Seal Island, Wooden Ball Island, Matinicus Island, Ragged Island), and Isles of Shoals Island Group (Duck Island, Appledore Island, Cedar Island, Smuttynose Island).

(b) *Gear marking requirements—(1) Specified areas.* Except for when fishing in LMA3 and Maine exempted waters, Maine, New Hampshire, Massachusetts, and Rhode Island lobster and crab trap/pot fishermen will follow the color code scheme assigned to the state that permits their vessel, indicated in paragraph (b)(3) of this section. For all other trap/pot and gillnet gear, excluding shark gillnet, the following areas are specified for gear marking purposes: Northern Inshore State Trap/Pot Waters, Cape Cod Bay Restricted Area, Massachusetts Restricted Area, Stellwagen Bank/Jeffreys Ledge Restricted Area, Northern Nearshore Trap/Pot Waters Area, Great South Channel Restricted Trap/Pot Area, Great South Channel Restricted Gillnet Area, Great South Channel Sliver Restricted Area, Southern Nearshore Trap/Pot Waters Area, Offshore Trap/Pot Waters Area, Other Northeast Gillnet Waters Area, Mid/South Atlantic Gillnet Waters Area, Other Southeast Gillnet Waters Area, Southeast U.S. Restricted Areas, and Southeast U.S. Monitoring Area.

(i) *Jordan Basin.* The Jordan Basin Restricted Area is bounded by the following points connected by straight lines in the order listed:

TABLE 5 TO PARAGRAPH (b)(1)(i)

Point	N lat.	W long.
JBRA1	43°15'	68°50'
JBRA2	43°35'	68°20'

TABLE 5 TO PARAGRAPH (b)(1)(i)—Continued

Point	N lat.	W long.
JBRA3	43°25'	68°05'
JBRA4	43°05'	68°20'
JBRA5	43°05'	68°35'
JBRA1	43°15'	68°50'

(ii) *Jeffreys Ledge Restricted Area.* The Jeffreys Ledge Restricted Area is bounded by the following points connected by a straight line in the order listed:

TABLE 6 TO PARAGRAPH (b)(1)(ii)

Point	N lat.	W long.
JLRA1	43°15'	70°25'
JLRA2	43°15'	70°00'
JLRA3	42°50'	70°00'
JLRA4	42°50'	70°25'
JLRA1	43°15'	70°25'

(2) *Markings.* All specified gear in specified areas must be marked with the color code shown in paragraph (b)(3) of this section. The color must be permanently marked on or along the line or lines specified under paragraphs (b)(2)(i) through (iii) of this section. Each colored mark must be clearly visible when the gear is hauled or removed from the water, including if the color of the rope is the same as or similar to the respective color code.

(i) *Northeast crab and lobster buoy line markings.* For all Northeast Region crab and lobster trap/pot gear regulated under this section, the surface system ropes must be marked with a solid 36-inch mark (91.4 cm) within two-fathoms (3.7 m) of the buoy. When fishing in Federal waters, all Northeast Region crab and lobster trap/pot surface system lines must have an additional 6-inch (15.24 cm) green mark one-foot (30.05 cm) below the 36-inch (91.4 cm) mark. These surface system marks must be solid marks that may be dyed, painted, or heat-shrink tubing, insertion of a colored rope or braided sleeve, or the line may be marked as approved in writing by the Assistant Administrator.

When fishing in state waters, the buoy line must be marked at least two additional times (top half, bottom half) and each mark must total 12-inches (30.5 cm) for a total of four marks in state waters. When in Federal waters, the buoy line must be marked at least three additional times (top, middle, and bottom) and each mark must total 12-inches (30.5 cm) for a total of five marks in Federal waters. In marking or affixing the color code for buoy line below the surface system for gear regulated under this paragraph (b)(2)(i), the line may be:

Dyed; painted, marked with thin colored whipping line, thin colored plastic, or heat-shrink tubing; spliced in insertion of a colored rope or braided sleeve or other material, or a thin line may be woven into or through the line; or the line may be marked as approved in writing by the Assistant Administrator.

(ii) *Other buoy line markings.* For all other trap/pot and gillnet gear regulated under this section, the buoy line must be marked at least three times (top, middle, bottom) and each mark must total 12 inches (30.5 cm) in length. If the mark consists of two colors then each color mark may be 6 inches (15.25 cm) for a total mark of 12 inches (30.5 cm). In marking or affixing the color code for gear regulated under this paragraph (b)(2)(ii), the line may be: Dyed, painted, marked with thin colored whipping line, thin colored plastic, or heat-shrink tubing, spliced in insertion of a colored rope or braided sleeve or other material, or a thin line may be woven into or through the line, or the line may be marked as approved in writing by the Assistant Administrator. An outreach guide illustrating the techniques for marking gear is available from the Regional Administrator, NMFS, Greater Atlantic Region upon request and posted on the NMFS, Greater Atlantic Region Atlantic Large Whale Take Reduction Plan website <https://www.fisheries.noaa.gov/new-england-mid-atlantic/marine-mammal-protection/atlantic-large-whale-take-reduction-plan#outreach>.

(iii) *Net panel markings.* Shark gillnet gear net panels in the Southeast U.S. Restricted Area S, Southeast U.S. Monitoring Area and Other Southeast Gillnet Waters is required to be marked. The net panel must be marked along both the floatline and the leadline at least once every 100 yards (91.4 m).

(iv) *Surface buoy markings.* Trap/pot and gillnet gear regulated under this section must mark all surface buoys to identify the vessel or fishery with one of the following: The owner's motorboat registration number, the owner's U.S. vessel documentation number, the Federal commercial fishing permit number, or whatever positive identification marking is required by the vessel's home-port state. When marking of surface buoys is not already required by state or Federal regulations, the letters and numbers used to mark the gear to identify the vessel or fishery must be at least 1 inch (2.5 cm) in height in block letters or Arabic numbers in a color that contrasts with the background color of the buoy. An outreach guide illustrating the techniques for marking gear is available from the Regional

Administrator, NMFS, Greater Atlantic Region upon request and posted on the NMFS, Greater Atlantic Region Atlantic Large Whale Take Reduction Plan

website <https://www.fisheries.noaa.gov/new-england-mid-atlantic/marine-mammal-protection/atlantic-large-whale-take-reduction-plan#outreach>.

(3) *Color code.* Gear must be marked with the appropriate colors to designate gear types and areas as follows.

TABLE 7 TO PARAGRAPH (b)(3)

Color code scheme	
Plan management area	Color
Northeast Region, Lobster and Crab Trap/Pot Gear	
Trawls fished by vessels permitted by the state of Maine when fished in state waters	Purple.
Trawls fished by vessels permitted by the state of Maine when fished in Federal LMA 1 waters	Purple, Green (Surface System).
Trawls fished by vessels permitted by the state of New Hampshire when fished in state waters	Yellow.
Trawls fished by vessels permitted by the state of New Hampshire when fished in Federal LMA 1 waters.	Yellow, Green (Surface System).
Trawls fished by vessels permitted by the state of Massachusetts when fished in state waters	Red.
Trawls fished by vessels permitted by the state of Massachusetts in Federal waters of LMA 1, OC, LMA 2 (including 2/3 overlap).	Red, Green (Surface System).
Trawls fished by vessels permitted by the state of Rhode Island in state waters	Silver/Gray.
Trawls fished by vessels permitted by the state of Rhode Island in Federal waters of LMA 2 (including 2/3 overlap).	Silver/Gray Green (Surface System).
Trawls fished in the Northeast EEZ Offshore Management Area 3 (LMA3) excluding the 2/3 overlap	Black, Green (Surface system).
Northeast Region, Other Trap/Pot Gear	
Massachusetts Restricted Area	Red.
Northern Nearshore	Red.
Northern Inshore State	Red.
Stellwagen Bank/Jeffreys Ledge Restricted Area	Red.
Great South Channel Restricted Area overlapping with LMA 2 and/or Outer Cape	Red.
Exempt Rhode Island state waters (single traps)	Red and Blue.
Exempt Massachusetts state waters in LMA 1 (single traps)	Red and White.
Exempt Massachusetts state waters in LMA 2 (single traps)	Red and Black.
Exempt Massachusetts state waters in Outer Cape (single traps)	Red and Yellow.
Isles of Shoals, ME (single traps)	Red and Orange.
Great South Channel Restricted Area overlapping with LMA 2/3 and/or LMA 3	Black.
Jordan Basin	Black and Purple (LMA 3), Red and Purple (LMA 1).
Jeffreys Ledge	Red and Green.
Trap/Pot Gear	
Southern Nearshore	Orange.
Southeast Restricted Area North (State Waters)	Blue and Orange.
Southeast Restricted Area North (Federal Waters)	Green and Orange.
Offshore	Black.
Gillnet Excluding Shark Gillnet	
Cape Cod Bay Restricted Area	Green.
Stellwagen Bank/Jeffreys Ledge Restricted Area	Green.
Great South Channel Restricted Area	Green.
Great South Channel Restricted Sliver Area	Green.
Other Northeast Gillnet Waters	Green.
Jordan Basin	Green and Yellow.
Jeffreys Ledge	Green and Black.
Mid/South Atlantic Gillnet Waters	Blue.
Southeast U.S. Restricted Area South	Yellow.
Other Southeast Gillnet Waters	Yellow.
Shark Gillnet (With Webbing of 5" or Greater)	
Southeast U.S. Restricted Area South	Green and Blue.
Southeast Monitoring Area	Green and Blue.
Other Southeast Waters	Green and Blue.

(c) *Restrictions applicable to trap/pot gear in regulated waters—(1) Universal trap/pot gear requirements.* In addition to the gear marking requirements listed in paragraph (b) of this section and the

area-specific measures listed in paragraphs (c)(2) through (12) of this section, all trap/pot gear in regulated waters, including the Northern Inshore State Trap/Pot Waters Area, must

comply with the universal gear

requirements listed in paragraphs (c)(1)(i) through (iii) of this section.¹

(i) *No buoy line floating at the surface.* No person or vessel may fish with trap/pot gear that has any portion of the buoy line floating at the surface at any time when the buoy line is directly connected to the gear at the ocean bottom. If more than one buoy is attached to a single buoy line or if a high flyer and a buoy are used together on a single buoy line, floating line may be used between these objects.

(ii) *No wet storage of gear.* Trap/pot gear must be hauled out of the water at least once every 30 days.

(iii) *Groundlines.* All groundlines must be composed entirely of sinking line. The attachment of buoys, toggles, or other floatation devices to groundlines is prohibited.

(2) *Area specific gear requirements.* Trap/pot gear must be set according to the requirements outlined in paragraphs (c)(2)(i) through (iii) of this section and in Table 8 to paragraph (c)(2)(iv) of this section.

(i) *Single traps and multiple-trap trawls.* All traps must be set according to the configuration outlined in Table 8 to paragraph (c)(2)(iv) of this section. Trawls up to and including five traps must only have one buoy line unless specified otherwise in Table 8 to paragraph (c)(2)(iv) of this section.

(ii) *Buoy line weak links.* All buoys, floatation devices and/or weights (except traps/pots, anchors, and leadline woven into the buoy line), such as surface buoys, high flyers, radar reflectors, subsurface buoys, toggles, window weights, etc., must be attached to the buoy line with a weak link placed either as close to each individual buoy, floatation device and/or weight as operationally feasible, or at the base of

the surface system where the surface system attaches to the single buoy line, and that meets the following specifications:

(A) *Weak link breaking strengths.* The breaking strength of the weak links must not exceed the breaking strength listed in paragraph (c)(2)(iv) of this section for a specified management area.

(B) *Approved weak links.* The weak link must be chosen from the following list approved by NMFS: Swivels, plastic weak links, rope of appropriate breaking strength, hog rings, rope stapled to a buoy stick, or other materials or devices approved in writing by the Assistant Administrator. An outreach guide illustrating the techniques for making weak links is available from the Regional Administrator, NMFS, Greater Atlantic Region upon request and posted on the NMFS, Greater Atlantic Region Atlantic Large Whale Take Reduction Plan website <https://www.fisheries.noaa.gov/new-england-mid-atlantic/marine-mammal-protection/atlantic-large-whale-take-reduction-plan#outreach>.

(C) *Clean breaks.* Weak links must break cleanly leaving behind the bitter end of the line. The bitter end of the line must be free of any knots when the weak link breaks. Splices are not considered to be knots for the purposes of this paragraph (c)(2)(ii)(C).

(iii) *Weak buoy lines and weak insertion devices.* All crab and lobster trap buoy lines in the management areas and configurations outlined in Table 8 to paragraph (c)(2)(iv) of this section must use weak line or must insert weak devices along the buoy line as described in Table 8 to paragraph (c)(2)(iv). The weak line and weak insert devices must meet the following specifications:

(A) *Breaking strength.* The breaking strength of the weak buoy lines and weak insert devices must not exceed 1,700 lbs. (771 kgs.).

(B) *Distance between weak insertions.* Weak insertion devices must be inserted in the specified intervals from the surface system and must be devices chosen from the following list approved by NMFS: Three-foot long hollow braided sleeves such as those known as the South Shore Sleeve, spliced insert of three-foot long weak buoy line that is no thinner than five sixteenths inches (8mm) in diameter, three-foot (.91 m) long “lazy splice” loop and double tuck of three eighths inch (9.5 mm) diameter line with three eighths inch (9.5 mm) diameter line, or a loop and double tuck (lazy splice) of three eighths inch (9.5mm) diameter line with five sixteenths inch (8 mm) diameter line, or other materials or devices approved in writing by the Assistant Administrator. An outreach guide illustrating the techniques for making weak insert devices is available from the Regional Administrator, NMFS, Greater Atlantic Region upon request and posted on the NMFS, Greater Atlantic Region Atlantic Large Whale Take Reduction Plan website <https://www.fisheries.noaa.gov/new-england-mid-atlantic/marine-mammal-protection/atlantic-large-whale-take-reduction-plan#outreach>.

(C) *Clean breaks.* Weak line and weak inserts must break cleanly leaving behind the bitter end of the line. The bitter end of the line must be free of any knots when the weak insert breaks. Splices are not considered to be knots for the purposes of this paragraph (c)(2)(iii)(C).

(iv) *Table of area specific trap/pot gear requirements.*

TABLE 8 TO PARAGRAPH (c)(2)(iv)

Mgmt area; location	Minimum number traps/rawl	Weak link strength	Weak rope or weak insertion configuration
Northeast Lobster/Crab Trap/Pot			
Northern Inshore State; Maine State and Pocket Waters ¹ .	3 (1 buoy line)	≤600 lbs	Weak line for the top 50 percent of the buoy line or two weak insertion devices, one at 25 percent and one at 50 percent buoy line length from top.
Northern Nearshore; Maine Zones A–G (3–6 miles).	8	≤600 lbs	Weak line for the top 50 percent of the buoy line or two weak insertion devices, one at 25 percent and one at 50 percent buoy line length from top.
Northern Inshore State and Massachusetts Restricted Area; Massachusetts State Waters ² .	No minimum number of traps per trawl. Trawls up to and including 3 or fewer traps must only have one buoy line.	≤600 lbs	Weak line for the top 50 percent of the buoy line or one weak insertion device at 50 percent buoy line length from top.

¹ Fishermen are also encouraged to maintain their buoy lines to be as knot-free as possible. Splices are

considered to be less of an entanglement threat and are thus preferable to knots.

TABLE 8 TO PARAGRAPH (c)(2)(iv)—Continued

Mgmt area; location	Minimum number traps/trawl	Weak link strength	Weak rope or weak insertion configuration
Northern Inshore State and Massachusetts Restricted Area; Other Massachusetts State Waters.	2 (1 buoy line) Trawls up to and including 3 or fewer traps must only have one buoy line.	≤600 lbs	Weak line for the top 50 percent of the buoy line or one weak insertion device at 50 percent buoy line length from top.
Northern Inshore State; New Hampshire State Waters.	No minimum trap/trawl	≤600 lbs	Weak line for the top 50 percent of the buoy line or one weak insertion device at 50 percent buoy line length from top.
Northern Nearshore; New Hampshire and Massachusetts (3–6 miles).	10	≤600 lbs	Weak line for the top 50 percent of the buoy line or two weak insertion devices, one at 25 percent and one at 50 percent buoy line length from top.
Northern Nearshore, Massachusetts Restricted Area, and Stellwagen Bank/ Jeffreys Ledge Restricted Area; LMA 1 (6–12 miles).	15	≤600 lbs	Weak line for the top 50 percent of the buoy line or two weak insertion devices, one at 25 percent and one at 50 percent buoy line length from top.
Northern Nearshore and LMA1 Restricted Area; LMA1 (12 + miles).	25	≤600 lbs	Weak line for the top 35 percent of the buoy line or one weak insertion device at 35 percent buoy line length from top.
Northern Inshore State and Massachusetts Restricted Area; LMA1/OC Overlap (0–3 miles).	No minimum number of traps per trawl	≤600 lbs	Weak line for the top 50 percent of the buoy line or one weak insertion device at 50 percent buoy line length from top.
Northern Inshore State, Massachusetts Restricted Area, and Massachusetts South Island Restricted Area; OC (0–3 miles).	No minimum number of traps per trawl	≤600 lbs	Weak line for the top 50 percent of the buoy line or one weak insertion device at 50 percent buoy line length from top.
Northern Nearshore and Massachusetts Restricted Area; OC (3–12 miles).	15	≤600 lbs	Weak line for the top 50 percent of the buoy line or two weak insertion devices, one at 25 percent and one at 50 percent buoy line length from top.
Northern Nearshore and Great South Channel Restricted Area; OC (12 + miles).	20	≤600 lbs	Weak line for the top 35 percent of the buoy line or one weak insertion device at 35 percent buoy line length from top.
Northern Inshore State; RI State Waters	No minimum number of traps per trawl	≤600 lbs	Weak line for the top 50 percent of the buoy line or one weak insertion device at 50 percent buoy line length from top.
Northern Nearshore; LMA 2 (3–12 miles).	15	≤600 lbs	Weak line for the top 50 percent of the buoy line or two weak insertion devices, one at 25 percent and one at 50 percent buoy line length from top.
Northern Nearshore, Great South Channel Restricted Area, and Massachusetts South of Island Restricted Area; LMA 2 (12 + miles).	25	≤600 lbs	Weak line for the top 35 percent of the buoy line or one weak insertion device at 35 percent buoy line length from top.
Offshore, Great South Channel Restricted Area, and Massachusetts South Island Restricted Area; LMA 2/3 Overlap (12 + miles).	25	≤1500 lbs (2,000 lbs if red crab trap/pot).	Weak line for the top 35 percent portion of the buoy line or one weak insertion device at 35 percent buoy line length from top.
Northeast Offshore waters North of 40°, Great South Channel Restricted Area, and Massachusetts South Island Restricted Area; LMA 3 (12 + miles).	45	≤1500 lbs (2,000 lbs if red crab trap/pot).	Weak line for the top 75 percent of the buoy line.

Other Trap/Pot

Northern Inshore State; Maine State and Pocket Waters ¹ .	2 (1 buoy line)	≤600 lbs.	
Northern Nearshore; Maine Zones A–G (3–6 miles) ¹ .	3 (1 buoy line)	≤600 lbs.	
Northern Nearshore; Maine Zones A–C (6–12 miles) ¹ .	5 (1 buoy line)	≤600 lbs.	
Northern Nearshore; Maine Zones D–G (6–12 miles) ¹ .	10	≤600 lbs.	
Northern Nearshore, Offshore, and LMA1 Restricted Area; Maine Zones A–E (12 + miles).	15	≤600 lbs (≤1500 lbs in offshore, 2,000 lbs if red crab trap/pot).	

TABLE 8 TO PARAGRAPH (c)(2)(iv)—Continued

Mgmt area; location	Minimum number traps/rawl	Weak link strength	Weak rope or weak insertion configuration
Northern Nearshore, Offshore, and LMA1 Restricted Area; Maine Zones F–G (12 + miles).	15 (Mar 1–Oct 31) 20 (Nov 1–Feb 28/29).	≤600 lbs (≤1500 lbs in offshore, 2,000 lbs if red crab trap/pot).	
Northern Inshore State and Massachusetts Restricted Area; Massachusetts State Waters ² .	No minimum number of traps per trawl. Trawls up to and including 3 or fewer traps must only have one buoy line.	≤600 lbs.	
Northern Inshore State, Massachusetts Restricted Area, and Massachusetts South Island Restricted Area; Other Massachusetts State Waters.	2 (1 buoy line) Trawls up to and including 3 or fewer traps must only have one buoy line.	≤600 lbs.	
Northern Inshore State; New Hampshire State Waters.	No minimum trap/rawl	≤600 lbs.	
Northern Nearshore and Massachusetts Restricted Area and Stellwagen Bank/ Jeffreys Ledge Restricted Area; LMA 1 (3–12 miles).	10	≤600 lbs.	
Northern Nearshore and LMA1 Restricted Area; LMA 1 (12 + miles).	20	≤600 lbs.	
Northern Inshore State and Massachusetts Restricted Area; LMA1/OC Overlap (0–3 miles).	No minimum number of traps per trawl	≤600 lbs.	
Northern Inshore State and Massachusetts Restricted Area; OC (0–3 miles).	No minimum number of traps per trawl	≤600 lbs.	
Northern Nearshore and Massachusetts Restricted Area; OC (3–12 miles).	10	≤600 lbs.	
Northern Nearshore and Great South Channel Restricted Area; OC (12 + miles).	20	≤600 lbs.	
Northern Inshore State; Rhode Island State Waters.	No minimum number of traps per trawl	≤600 lbs.	
Northern Nearshore, and Massachusetts South Island Restricted Area; LMA 2 (3–12 miles).	10	≤600 lbs.	
Northern Nearshore, Great South Channel Restricted Area; LMA 2 (12 + miles).	20	≤600 lbs.	
Northeast Offshore and Great South Channel Restricted Area, and Massachusetts South Island Restricted Area; LMA 2/3 Overlap (12 + miles).	20	≤1500 lbs (2,000 lbs if red crab trap/pot).	
Northeast Offshore waters, Great South Channel Restricted Area, and Massachusetts South Island Restricted Area; LMA 3 (12 + miles).	20	≤1500 lbs (2,000 lbs if red crab trap/pot).	
Southern Nearshore; LMA 4,5,6	≤600 lbs.	
Southeast U.S. Restricted Area North; ³ Florida State Waters.	1	≤200 lbs.	
Southeast U.S. Restricted Area North; ³ Georgia State Waters.	1	≤600 lbs.	
Southeast U.S. Restricted Area North; ³ South Carolina State Waters.	1	≤600 lbs.	
Southeast U.S. Restricted Area North; ³ Federal Waters off Florida, Georgia, South Carolina.	1	≤600 lbs.	

¹ The pocket waters and 6-mile line are defined in paragraphs (a)(2)(ii) and (iii) of this section.

² Massachusetts State waters as defined as paragraph (a)(3)(ii) of this section.

³ See paragraph (f)(1) of this section for description of area.

(3) *Massachusetts Restricted Area*—(i) *Area*. The Massachusetts Restricted Area is bounded by the following points connected by straight lines in the order listed, and bounded on the west by the shoreline of Cape Cod, Massachusetts.

TABLE 9 TO PARAGRAPH (c)(3)(i)

Point	N lat.	W long.
MRA1	42°12'	70°44'
MRA2	42°12'	70°30'
MRA3	42°30'	70°30'
MRA4	42°30'	69°45'
MRA5	41°56.5'	69°45'

TABLE 9 TO PARAGRAPH (c)(3)(i)—Continued

Point	N lat.	W long.
MRA6	41°21.5'	69°16'
MRA7	41°15.3'	69°57.9'
MRA8	41°20.3'	70°00'

TABLE 9 TO PARAGRAPH (c)(3)(i)—
Continued

Point	N lat.	W long.
MRA9	41°40.2'	70°00'
MRA1	42°12'	70°44'

(ii) *Closure to fishing with buoy lines.* From February 1 to April 30, it is prohibited to fish with, set, or possess trap/pot gear in the area in paragraph (c)(3)(i) unless it is fished without buoy lines or with buoy lines that are stored on the bottom until it can be remotely released for hauling, or it is stowed in accordance with § 229.2. Authorizations for fishing without buoy lines must be obtained if such fishing would not be in accordance with surface marking requirements of §§ 697.21 and 648.84 of this chapter.

(iii) *Area-specific gear or vessel requirements.* From May 1 through January 31, no person or vessel may fish with or possess trap/pot gear in the Massachusetts Restricted Area unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, and the area-specific requirements listed in paragraph (c)(2) of this section, or unless the gear is stowed as specified in § 229.2.

(4) *Massachusetts South Island Restricted Area—(i) Area.* The Massachusetts South Island Restricted Area is bounded by the following points connected by straight lines in the order listed, and bounded on the north by the shoreline of Nantucket, Massachusetts.

TABLE 10 TO PARAGRAPH (c)(4)(i)

Point	N lat.	W long.
MSI1	41°15.3'	70°18.9'
MSI2	41°15.3'	70°10.6'
MSI3	41°15.3'	69°57.9'
MSI4	41°21.5'	69°16'
MSI5	40°37.02'	69°16'
MSI6	40°37.02'	70°18.9'
MSI1	41°15.3'	70°18.9'

(ii) *Closure to fishing with buoy lines.* From February 1 to April 30, it is prohibited to fish with, set, or possess trap/pot gear in the area in paragraph (c)(4)(i) unless it is fished without buoy lines or with buoy lines that are stored on the bottom until they can be remotely released for hauling, or the trap/pot gear is stowed in accordance with § 229.2. Authorizations for fishing without buoy lines must be obtained if such fishing would not be in accordance with surface marking requirements of §§ 697.21 and 648.84 of this chapter.

(iii) *Area-specific gear or vessel requirements.* From May 1 through January 31, no person or vessel may fish with or possess trap/pot gear in the Massachusetts South Island Restricted Area unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, and the area-specific requirements listed in paragraph (c)(2) of this section, or unless the gear is stowed as specified in § 229.2.

(5) *Great South Channel Restricted Trap/Pot Area—(i) Area.* The Great South Channel Restricted Trap/Pot Area consists of the area bounded by the following points.

TABLE 11 TO PARAGRAPH (c)(5)(i)

Point	N Lat.	W Long.
GSC1	41°40'	69°45'
GSC2	41°0'	69°05'
GSC3	41°38'	68°13'
GSC4	42°10'	68°31'
GSC1	41°40'	69°45'

(ii) *Closure to fishing with buoy lines.* From April 1 through June 30, it is prohibited to fish with, set, or possess trap/pot gear in the area in paragraph (c)(5)(i) unless it is fished without buoy lines or with buoy lines that are stored on the bottom until they can be remotely released for hauling, or the trap/pot gear is stowed in accordance with § 229.2. Authorizations for fishing without buoy lines must be obtained if such fishing would not be in accordance with surface marking requirements of §§ 697.21 and 648.84 of this chapter.

(iii) *Area-specific gear or vessel requirements.* From July 1 through March 31, no person or vessel may fish with or possess trap/pot gear in the Great South Channel Restricted Trap/Pot Area unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, and the area-specific requirements listed in paragraph (c)(2) of this section, or unless the gear is stowed as specified in § 229.2.

(6) *Lobster Management Area One Restricted Area—(i) Area.* The Lobster Management Area One Restricted Area (LMRA1) is bounded by the following points connected by straight lines in the order listed.

TABLE 12 TO PARAGRAPH (c)(6)(i)

Point	N lat.	W long.
LMRA1 1	43°06'	69°36.77'

TABLE 12 TO PARAGRAPH (c)(6)(i)—
Continued

Point	N lat.	W long.
LMRA1 2	43°44'	68°21.6'
LMRA1 3	43°32.68'	68°17.27'
LMRA1 4	42°53.52'	69°32.16'
LMRA1 1	43°06'	69°36.77'

(ii) *Restrictions to fishing with buoy lines.* From October 1 to January 31, it is prohibited to fish with, set, or possess trap/pot gear in the area in paragraph (c)(6)(i) unless it is fished without buoy lines or with buoy lines that are stored on the bottom until they can be remotely released for hauling, or the trap/pot gear is stowed in accordance with § 229.2. Authorizations for fishing without buoy lines must be obtained if such fishing would not be in accordance with surface marking requirements of §§ 697.21 and 648.84 of this chapter.

Alternative 1—A (for Paragraph (c)(6)(ii))

(ii) *Restrictions to fishing with buoy lines.* There are no seasonal restrictions to fishing with buoy lines.

Alternative 1—B (for Paragraph (c)(6)(ii))

(ii) *Restrictions to fishing with buoy lines.* The Regional Administrator may determine whether the frequency of entanglements from trap/pot gear in the Northeast region has been reduced by 60 percent from [effective date of the final rule] within a time period that allows for meaningful analysis. If the Regional Administrator determines that the frequency of such entanglements has not been reduced by 60 percent, then from October 1 to January 31, it shall be prohibited to fish with, set, or possess trap/pot gear in the area in paragraph (c)(6)(i) unless it is fished without buoy lines or with buoy lines that are stored on the bottom until they can be remotely released for hauling, or the trap/pot gear is stowed in accordance with § 229.2. Authorizations for fishing without buoy lines must be obtained if such fishing would not be in accordance with surface marking requirements of §§ 697.21 and 648.84 of this chapter.

(iii) *Area-specific gear or vessel requirements.* From February 1 through September 30, no person or vessel may fish with or possess trap/pot gear in the Lobster Management Area One Restricted Area unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, and the area-specific requirements listed in paragraph (c)(2) of this section, or

unless the gear is stowed as specified in § 229.2.

(7) *Stellwagen Bank/Jeffreys Ledge Restricted Area*—(i) *Area*. The Stellwagen Bank/Jeffreys Ledge Restricted Area includes all Federal waters of the Gulf of Maine, except those designated as the Massachusetts Restricted Area in paragraph (c)(3) of this section, that lie south of 43°15' N lat. and west of 70°00' W long.

(ii) *Year round area-specific gear or vessel requirements*. No person or vessel may fish with or possess trap/pot gear in the Stellwagen Bank/Jeffreys Ledge Restricted Area unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, and the area-specific requirements listed in paragraph (c)(2) of this section, or unless the gear is stowed as specified in § 229.2.

(8) *Offshore Trap/Pot² Waters Area*—(i) *Area*. The Offshore Trap/Pot Waters Area includes all Federal waters of the EEZ Offshore Management Area known as Lobster Management Area 3, including the area known as the Area ²/₃ Overlap and Area ³/₅ Overlap as defined in the American Lobster Fishery regulations at § 697.18 of this title, with the exception of the Great South Channel Restricted Trap/Pot Area and Southeast Restricted Area, and extending south along the 100-fathom (600-ft or 182.9-m) depth contour from 35°14' N lat. South to 27°51' N lat., and east to the eastern edge of the EEZ.

(ii) *Year-round area-specific gear or vessel requirements*. No person or vessel may fish with or possess trap/pot gear in the northeast portion of Offshore Trap/Pot Waters Area that overlaps an area from the U.S./Canada border south to a straight line from 41°18.2' N lat., 71°51.5' W long. (Watch Hill Point, RI) south to 40°00' N lat., and then east to the eastern edge of the EEZ, unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, and the area-specific requirements listed in paragraph (c)(2) of this section, or unless the gear is stowed as specified in § 229.2.

(iii) *Seasonal area-specific gear or vessel requirements*. From September 1 to May 31, no person or vessel may fish with or possess trap/pot gear in the

Offshore Trap/Pot Waters Area that overlaps an area bounded on the north by a straight line from 41°18.2' N lat., 71°51.5' W long. (Watch Hill Point, RI) south to 40°00' N lat. and then east to the eastern edge of the EEZ, and bounded on the south by a line at 32°00' N lat., and east to the eastern edge of the EEZ, unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, and area-specific requirements in paragraph (c)(2) of this section or unless the gear is stowed as specified in § 229.2.

(iv) *Seasonal area-specific gear or vessel requirements*. From November 15 to April 15, no person or vessel may fish with or possess trap/pot gear in the Offshore Trap/Pot Waters Area that overlaps an area from 32°00' N lat. south to 29°00' N lat. and east to the eastern edge of the EEZ, unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, the area-specific requirements in paragraph (c)(2) of this section or unless the gear is stowed as specified in § 229.2.

(v) *Seasonal area-specific gear or vessel requirements*. From December 1 to March 31, no person or vessel may fish with or possess trap/pot gear in the Offshore Trap/Pot Waters Area that overlaps an area from 29°00' N lat. south to 27°51' N lat. and east to the eastern edge of the EEZ, unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, the area-specific requirements in paragraph (c)(2) in this section, or unless the gear is stowed as specified in § 229.2.

(vi) [Reserved]

(9) *Northern Inshore State Trap/Pot Waters Area*—(i) *Area*. The Northern Inshore State Trap/Pot Waters Area includes the State waters of Rhode Island, Massachusetts, New Hampshire, and Maine, with the exception of Massachusetts Restricted Area and those waters exempted under paragraph (a)(3) of this section. Federal waters west of 70°00' N lat. in Nantucket Sound are also included in the Northern Inshore State Trap/Pot Waters Area.

(ii) *Year-round area-specific gear or vessel requirements*. No person or vessel may fish with or possess trap/pot gear in the Northern Inshore State Trap/Pot Waters Area unless that gear complies with the gear marking requirements specified in paragraph (b) of this

section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, the area-specific requirements in paragraph (c)(2) of this section or unless the gear is stowed as specified in § 229.2.

(10) *Northern Nearshore Trap/Pot Waters Area*—(i) *Area*. The Northern Nearshore Trap/Pot Waters Area includes all Federal waters of EEZ Nearshore Management Area 1, Area 2, and the Outer Cape Lobster Management Area (as defined in the American Lobster Fishery regulations at § 697.18 of this title), with the exception of the Great South Channel Restricted Trap/Pot Area, Massachusetts Restricted Area, Stellwagen Bank/Jeffreys Ledge Restricted Area, and Federal waters west of 70°00' N lat. in Nantucket Sound (included in the Northern Inshore State Trap/Pot Waters Area) and those waters exempted under paragraph (a)(3) of this section.

(ii) *Year-round area-specific gear or vessel requirements*. No person or vessel may fish with or possess trap/pot gear in the Northern Nearshore Trap/Pot Waters Area unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, the area-specific requirements in paragraph (c)(2) of this section, or unless the gear is stowed as specified in § 229.2.

(11) *Southern Nearshore³ Trap/Pot Waters Area*—(i) *Area*. The Southern Nearshore Trap/Pot Waters Area includes all State and Federal waters that fall within EEZ Nearshore Management Area 4, EEZ Nearshore Management Area 5, and EEZ Nearshore Management Area 6 (as defined in the American Lobster Fishery regulations in § 697.18 of this title, and excluding the Area ³/₅ Overlap), and inside the 100-fathom (600-ft or 182.9-m) depth contour line from 35°30' N lat. south to 27°51' N lat. and extending inshore to the shoreline or exemption line, with the exception of those waters exempted under paragraph (a)(3) of this section and those waters in the Southeast Restricted Area defined in paragraph (f)(1) of this section.

(ii) *Year-round area-specific gear or vessel requirements*. No person or vessel may fish with or possess trap/pot gear in the Southern Nearshore Trap/Pot Waters Area that is east of a straight line from 41°18.2' N lat., 71°51.5' W long. (Watch Hill Point, RI) south to 40°00' N

² Fishermen using red crab trap/pot gear should refer to paragraph (c)(12) of this section for the restrictions applicable to the red crab trap/pot fishery.

³ Fishermen using red crab trap/pot gear should refer to paragraph (c)(12) of this section for the restrictions applicable to the red crab trap/pot fishery.

lat., unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, the area-specific requirements in paragraph (c)(2) of this section or unless the gear is stowed as specified in § 229.2.

(iii) *Seasonal area-specific gear or vessel requirements.* From September 1 to May 31, no person or vessel may fish with or possess trap/pot gear in the Southern Nearshore Trap/Pot Waters Area that overlaps an area bounded on the north by a straight line from 41°18.2' N lat., 71°51.5' W long. (Watch Hill Point, RI) south to 40°00' N lat. and then east to the eastern edge of the EEZ, and bounded on the south by 32°00' N lat., and east to the eastern edge of the EEZ, unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements in paragraph (c)(1) of this section, the area-specific requirements in paragraph (c)(2) of this section or unless the gear is stowed as specified in § 229.2.

(iv) *Seasonal area-specific gear or vessel requirements.* From November 15 to April 15, no person or vessel may fish with or possess trap/pot gear in the Southern Nearshore Trap/Pot Waters Area that overlaps an area from 32°00' N lat. south to 29°00' N lat. and east to the eastern edge of the EEZ, unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, the area-specific requirements in paragraph (c)(2) of this section or unless the gear is stowed as specified in § 229.2.

(v) *Seasonal area-specific gear or vessel requirements.* From December 1 to March 31, no person or vessel may fish with or possess trap/pot gear in the Southern Nearshore Trap/Pot Waters Area that overlaps an area from 29°00' N lat. south to 27°51' N lat. and east to the eastern edge of the EEZ, unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in

paragraph (c)(1) of this section, the area-specific requirements in (c)(2) of this section or unless the gear is stowed as specified in § 229.2.

(vi) [Reserved]

(12) *Restrictions applicable to the red crab trap/pot fishery*—(i) *Area.* The red crab trap/pot fishery is regulated in the waters identified in paragraphs (c)(6)(i) and (c)(9)(i) of this section.

(ii) *Year-round area-specific gear or vessel requirements.* No person or vessel may fish with or possess red crab trap/pot gear in the area identified in paragraph (c)(12)(i) of this section that overlaps an area from the U.S./Canada border south to a straight line from 41°18.2' N lat., 71°51.5' W long. (Watch Hill Point, RI) south to 40°00' N lat., and then east to the eastern edge of the EEZ, unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, the area-specific requirements in paragraph (c)(2) of this section or unless the gear is stowed as specified in § 229.2.

(iii) *Seasonal area-specific gear or vessel requirements.* From September 1 to May 31, no person or vessel may fish with or possess red crab trap/pot gear in the area identified in paragraph (c)(12)(i) of this section that overlaps an area bounded on the north by a straight line from 41°18.2' N lat., 71°51.5' W long. (Watch Hill Point, RI) south to 40°00' N lat. and then east to the eastern edge of the EEZ, and bounded on the south by a line at 32°00' N lat., and east to the eastern edge of the EEZ, unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, the area-specific requirements in paragraph (c)(2) of this section or unless the gear is stowed as specified in § 229.2.

(iv) *Seasonal area-specific gear or vessel requirements.* From November 15 to April 15, no person or vessel may fish with or possess red crab trap/pot gear in the area identified in paragraph (c)(12)(i) of this section that overlaps an

area from 32°00' N lat. south to 29°00' N lat. and east to the eastern edge of the EEZ, unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, the area-specific requirements in paragraph (c)(2) of this section or unless the gear is stowed as specified in § 229.2.

(v) *Seasonal area-specific gear or vessel requirements.* From December 1 to March 31, no person or vessel may fish with or possess red crab trap/pot gear in the area identified in paragraph (c)(12)(i) of this section that overlaps an area from 29°00' N lat. south to 27°51' N lat. and east to the eastern edge of the EEZ, unless that gear complies with the gear marking requirements specified in paragraph (b) of this section, the universal trap/pot gear requirements specified in paragraph (c)(1) of this section, the area-specific requirements in paragraph (c)(2) of this section or unless the gear is stowed as specified in § 229.2.

(vi) [Reserved]

PART 697—ATLANTIC COASTAL FISHERIES COOPERATIVE MANAGEMENT

■ 4. The authority citation for 50 CFR part 697 continues to read as follows:

Authority: 16 U.S.C. 5101 *et seq.*

■ 5. In § 697.21, revise paragraph (b)(3) to read as follows:

§ 697.21 Gear identification and marking, escape vent, maximum trap size, and ghost panel requirements.

* * * * *

(b) * * *

(3) No American lobster trap trawl shall exceed 1.5 nautical miles (2.78 km) in length, as measured from radar reflector to radar reflector, except in the EEZ Offshore Management Area 3 where the maximum length of a lobster trap trawl shall not exceed 1.75 nautical miles (3.24 km).

* * * * *

[FR Doc. 2020-28775 Filed 12-30-20; 8:45 am]

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**NOAA
FISHERIES**

Greater Atlantic
Regional Fisheries
Office

**Comments are due
by March 1, 2021.**

For information on **public hearings** on the DEIS and proposed rule, as well as copies of the documents and background information, visit our website: fisheries.noaa.gov/ALWTRP.

Attendance at a public hearing is not necessary for commenting.

Comments may also be submitted in writing **through the online comment portal**.

To comment, go to: [regulations.gov](https://www.regulations.gov). Search for NOAA-NMFS-2020-0031.

Choose "Comment Now" to submit your comments.

Questions?

Contact Colleen.
Coogan@noaa.gov,
Marisa.Trego@noaa.gov
or call (978) 281-9181.

Proposed "Risk Reduction Rule" to Modify the Atlantic Large Whale Take Reduction Plan

SUMMARY FOR PUBLIC COMMENTS

To reduce the impacts of entanglement in commercial fishing gear on right whales, we are requesting comments on proposed changes to the Atlantic Large Whale Take Reduction Plan (ALWTRP). These modifications are intended to achieve at least a 60 percent reduction in mortalities or serious injuries of right whales in the Northeast crab and lobster trap/pot fisheries, which deploy about 93 percent of the buoy lines fished in areas where right whales occur. In 2021, the Atlantic Large Whale Take Reduction Team will be asked to recommend risk reduction measures for other Atlantic trap/pot and gillnet fisheries.

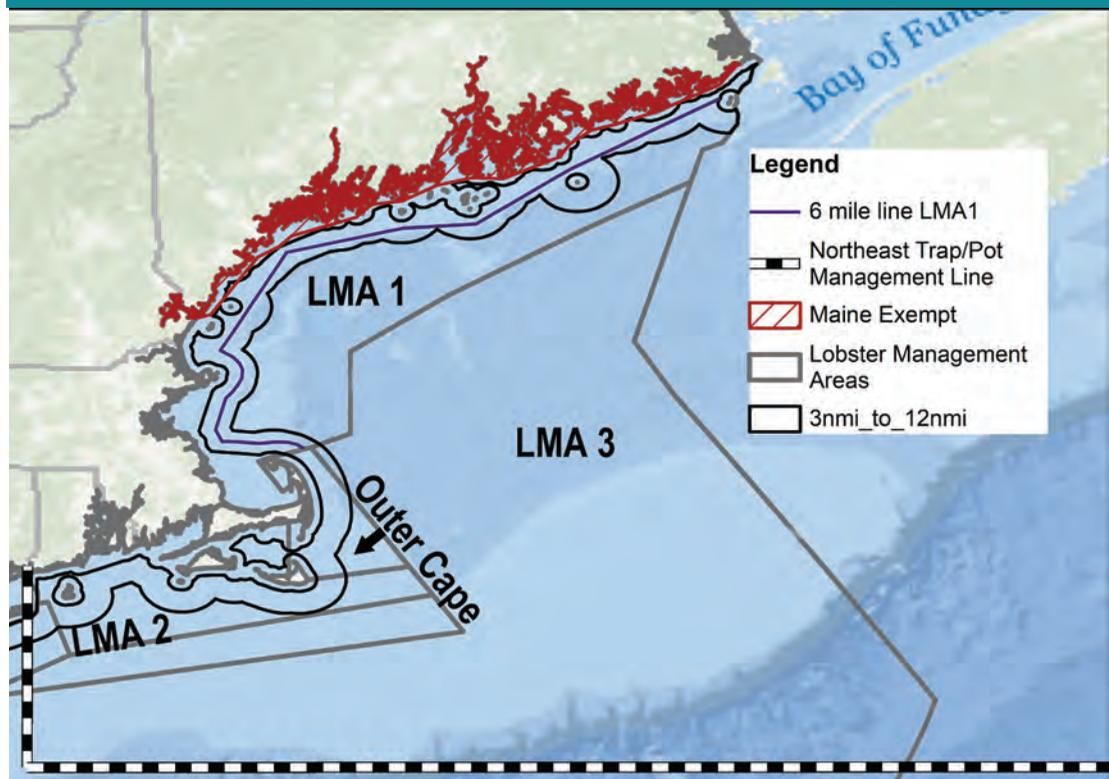
The proposed rule and the Draft Environmental Impact Statement, as well as details on how to provide comments, can be found on the Plan website: fisheries.noaa.gov/ALWTRP.

The Proposed Rule would:

- Modify gear marking to introduce state-specific marking colors
- Increase the number of and area of marked lines
- Modify gear configurations to reduce the number of vertical buoy lines by requiring more traps between buoy lines and by introducing weak insertions or weak rope into buoy lines
- Modify existing seasonal restricted areas to restrict buoy lines (but allow ropeless fishing)
- Add up to two new seasonal buoy line closures

The tables on the following pages list the regulatory elements of the risk reduction alternatives in the proposed rule and considered in the preferred alternative within the Draft Environmental Impact Statement. Measures shaded in blue are those that will be managed under other state or fishery management rulemaking.

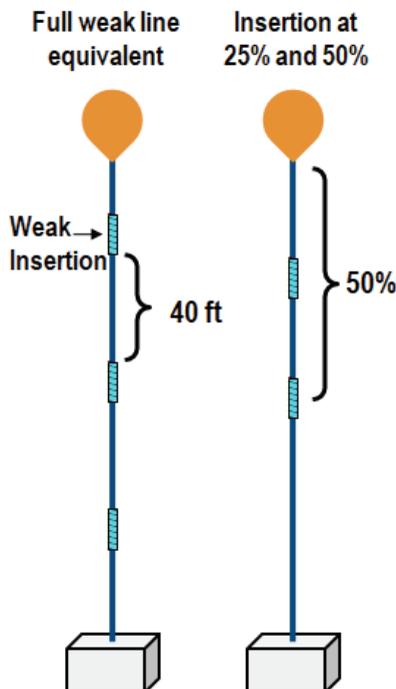
Lobster Management Areas and Regulatory Lines



Traps Per Trawl

Area	Current	Proposed
ME exempt area-3 nm	2 traps/trawl	3 traps/trawl
ME 3-6 nm*	3 traps/trawl	8 traps/trawl
LMA 1, 6*-12 nm	10 traps/trawl	15 traps/trawl
LMA1, beyond 12 nm	15-20 traps/trawl	25 traps/trawl
LMA 2, OCC 3-12 nm	10 traps/trawl	15 traps/trawl
LMA 2 beyond 12 nm	20 traps/trawl	25 traps/trawl
MA state waters	1 or 2 traps/trawl	No singles on vessels longer than 29' (8.84 m); permits after 1/1/2020
LMA3	20 traps/trawl	Year-round: 45 traps/trawl, extend trawl length to 1.75 nm

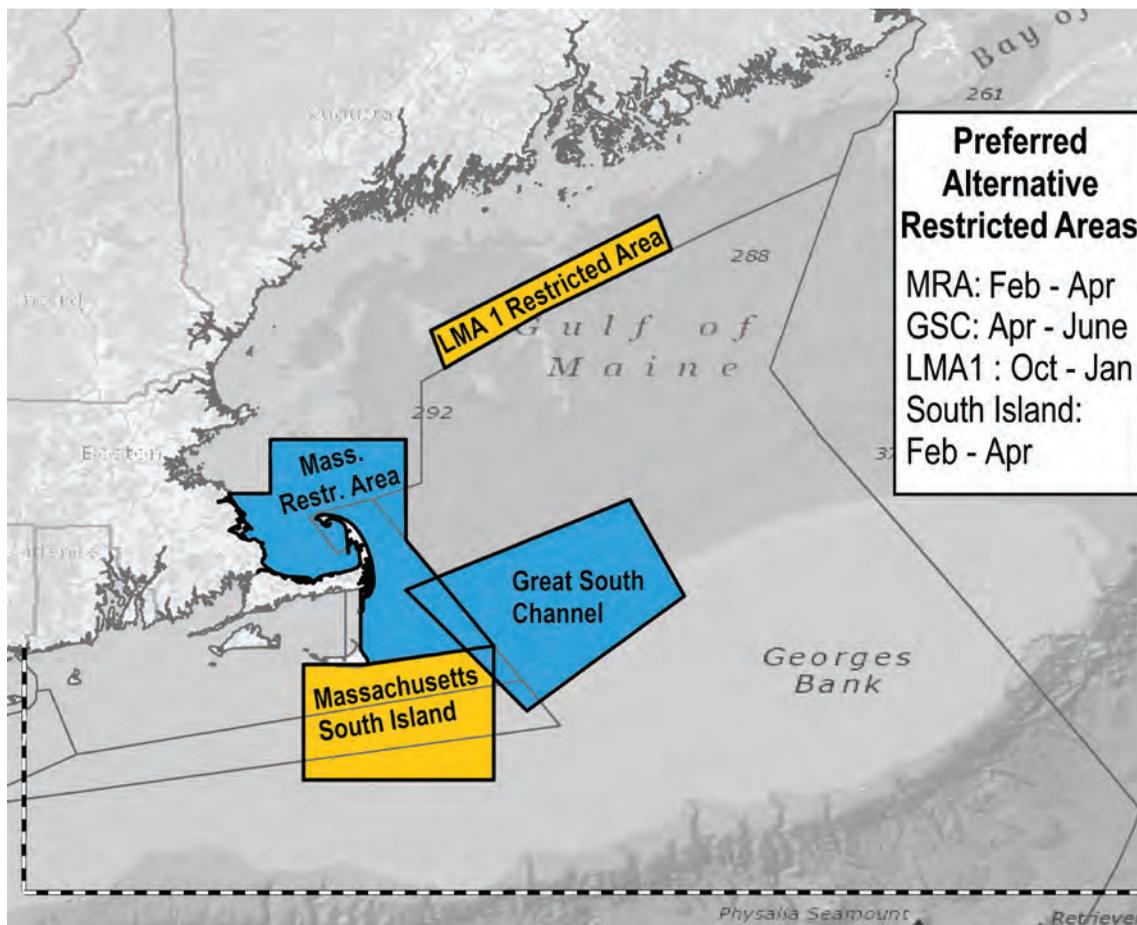
Weak Link and Weak Line Regulations



Component	Area	Current	Proposed
Weak Link Modification	Northeast Region	Weak link required attaching buoy to buoy line	Allow it to be at base of the surface system or, as currently required, at buoy
Weak Line	ME exempt area	None	1 weak insertion 50% down the line
	NH/MA/RI Coast-3 nm	None	1 weak insertion 50% down the line
	ME exempt area-3 nm, All areas 3-12 nm	None	2 weak insertions at 25% and 50% down line
	LMA 1, 2, OCC beyond 12 nm	None	1 weak insertion 35% down the line
	LMA 3	None	1 buoy line weak year-round to 75%

Blue shading indicates state regulations, including Maine gear marking, Massachusetts Restricted Area closure extension into May, and Massachusetts banning of single pots on vessels greater than 29 feet after permit transfers.

Restricted Areas



Area	Current	Proposed
All Restricted Areas	Closed to Fishing	Allow trap/pot fishing without buoy lines in existing and proposed restricted areas with an exempted fishing permit (EFP). EFP authorizations would likely include conditions to protect right whales (e.g. area restrictions, low vessel speed, observer monitoring, and reporting requirements.)
LMA1 Restricted Area	None	Restricted Oct-Jan Or 1-A No restriction Or 1-B Restricted Oct-Jan based on future determinations
Massachusetts South Island Restricted Area	None	Restricted Feb-April
Massachusetts Restricted Area (MRA)	Closed Feb-Apr State waters closed through May until < than 3 whales remain (confirmed by surveys)	Restricted Feb-Apr State waters closed through May until less than 3 whales remain (confirmed by surveys)
Great South Channel Restricted Area	Closed Apr-June	Restricted Apr-June

Gear Marking

Gear Marking in Federal Waters

Federal Water
Marks



Area	Current	Proposed
Marks		
Entire Northeast Region	Three 12-inch marks, one at the top, middle, and bottom in the color below	One 3-foot long state-specific mark within two fathoms of the buoy (within the surface system) and three 12-inch marks at the top, middle and bottom of the buoy line (color below)
	No federal specific mark	6-inch green mark within the surface system within 12 inches of the 3-foot mark
Colors		
Maine	Red	Purple with 6-inch green mirroring state regulations effective 09/2020
New Hampshire	Red	Yellow with 6-inch green
Massachusetts	Red	Red with 6-inch green
Rhode Island	Red	Silver/Gray with 6-inch green

State Water
Marks



Gear Marking in State Waters

Area	Current	Proposed
Marks		
Maine	None in TRP regs, state regulations as of 09/2020	One 3-foot long and one or two additional 1-foot marks (by depth) through state regulation
Massachusetts, Rhode Island, & New Hampshire	Three 12-inch marks, one at the top, middle, and bottom in the color below	One 3-foot long state-specific mark within two fathoms of the buoy (within the surface system) and two 12-inch marks in the top and bottom half of the buoy line in (color below)
Colors		
Maine	Purple (as of 09/2020)	Purple
New Hampshire	Red	Yellow
Massachusetts	Red & White (LMA1) Red & Black (LMA2) Red & Yellow (Outer Cape)	Red
Rhode Island	Red & Blue	Silver/Gray



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: American Lobster Management Board

FROM: Caitlin Starks, FMP Coordinator

DATE: January 15, 2021

SUBJECT: NOAA Fisheries Releases Draft Biological Opinion on 10 Fishery Management Plans

The Sustainable Fisheries Division of NOAA Fisheries Greater Atlantic Regional Fisheries Office has reinitiated formal Endangered Species Act Section 7 consultation with the Protected Resources Division on the authorization of fisheries under the authority of the Magnuson-Stevens Fishery Conservation and Management Act and the Atlantic Coastal Fisheries Cooperative Management Act and on the implementation of the New England Fisheries Management Council's Omnibus Essential Fish Habitat Amendment 2. The following fisheries included in the consultation:

1. American Lobster
2. Atlantic Bluefish
3. Atlantic Deep-Sea Red Crab
4. Mackerel/Squid/Butterfish
5. Monkfish
6. Northeast Multispecies
7. Northeast Skate Complex
8. Spiny Dogfish
9. Summer Flounder/Scup/Black Sea Bass
10. Jonah Crab

Due to its length, the document has not been included in the materials, but instead, the Draft Biological Opinion on these 10 Fishery Management Plans can be found at this link:

<https://www.fisheries.noaa.gov/bulletin/draft-biological-opinion-10-fishery-management-plans-released>.

This draft Biological Opinion on 10 Fishery Management Plans in the Greater Atlantic Region and the New England Fishery Management Council's Omnibus Habitat Amendment 2 is released for feedback; comments are due February 21, 2021. In accordance with section 7 of the ESA, as amended, this document represents NMFS' biological opinion (Opinion) on the authorization of these fisheries and their effects on ESA-listed species under NMFS jurisdiction.



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MEMORANDUM

TO: American Lobster Management Board

FROM: Caitlin Starks, FMP Coordinator

DATE: January 15, 2021

SUBJECT: REVISED - Review of American Lobster Stock Status, Reference Points, and Recommendations from 2020 Benchmark Assessment and Peer Review

At its October 2020 meeting, the American Lobster Board (Board) reviewed the 2020 Benchmark Stock Assessment and Peer Review Report, and accepted it for management use. The Board also adopted the new reference points as recommended by the assessment, and committed to considering management responses to the assessment findings at its next meeting in February 2021. This memo provides a summary of new reference points, stock status determinations, and recommendations from the assessment and peer review for each lobster stock, which the Board should consider in its discussion on appropriate management responses to the assessment findings.

Abundance and Exploitation Reference Points

New abundance and exploitation reference points were adopted based on the recommendations of the 2020 stock assessment, with the rationale that the former reference points were not appropriate given changes in environmental conditions. The updated reference points were derived from a new methodology that accounts for changing environmental conditions and new baselines for stock productivity. Regime shift analysis indicated that the GOM/GBK stock shifted from a low abundance regime during the early 1980s through 1995 to a moderate abundance regime during 1996-2008, and shifted once again to a high abundance regime during 2009-2018 (Figure 1). Conversely, the SNE stock shifted from a high abundance regime during the early 1980s through 2002 to a low abundance regime during 2003-2018 (Figure 3).

Three reference points are used to characterize stock abundance. The abundance threshold is calculated as the average of the three highest abundance years during the low abundance regime. A stock abundance level below this threshold is considered significantly depleted and in danger of stock collapse. This was the only abundance reference point recommended for the SNE stock due to its record low abundance and low likelihood of reaching this threshold in the near future. The abundance limit is calculated as the median abundance during the moderate abundance regime. Stock abundance that falls below this limit is considered depleted because the stock's ability to replenish itself is diminished. The fishery/industry target is calculated as the 25th percentile of the abundance during the high abundance regime. In this case, when abundance falls below this target, the stock's ability to replenish itself is not jeopardized, but it may indicate a degrading of economic conditions for the lobster fishery.

Two reference points are used to evaluate the fishing mortality condition of the stocks. The exploitation threshold is calculated as the 75th percentile of exploitation (annual catch in numbers divided by abundance) during the current abundance regime. The stock is considered to be experiencing overfishing if exploitation exceeds the exploitation threshold. The exploitation target is calculated as the 25th percentile of exploitation during the current abundance regime.

Gulf of Maine/Georges Bank Stock Status

Based on the updated reference points, the GOM/GBK stock is not depleted and overfishing is not occurring (Figures 1 and 2, respectively). The average abundance from 2016-2018 was 256 million lobster, which is greater than the fishery/industry target of 212 million lobster. The average exploitation from 2016-2018 was 0.459, below the exploitation target of 0.461. Stock projections conducted as part of the assessment suggested a low probability of abundance declining below the abundance target over the next 10 years.

Southern New England Stock Status

Based on the updated reference points, the SNE stock is significantly depleted and overfishing is not occurring (Figures 3 and 4, respectively). The average abundance from 2016-2018 was 7 million lobster, well below the abundance threshold of 20 million lobster. The average exploitation from 2016-2018 was 0.274, falling between the exploitation threshold of 0.290 and the exploitation target of 0.257. Exploitation is not considered favorable as it exceeds the target.

Stock projections conducted as part of the assessment show a low probability of the stock condition changing among the most credible scenarios. In the absence of mortality, reference abundance would be projected to increase with recruit abundance exceeding the maximum abundance for the current regime (Figure 5). However, increases in abundance are likely to be limited due to the projected continuing decline in recruitment.

The assessment's model estimates and non-model based stock indicators results suggest careful consideration of key issues for the SNE stock:

1. Recruitment indices indicate that the stock is not rebuilding and is in recruitment failure.
2. The contraction of the stock distribution has continued and is becoming apparent in the offshore portion as well as the inshore.
3. The total SNE landings have continued to decline, and the 2018 landings were a time series low.
4. Disease remains high in Rhode Island and Massachusetts, and all four temperature indicators are negative. The stressful environment may be having both lethal and sublethal effects.
5. There is evidence that environmental influences have resulted in a decreasing recruitment rate. Substantive measures are needed to increase adult abundance in order to improve recruitment success.

Assessment and Peer Review Recommendations

GOM/GBK

Based on the favorable condition of the GOM/GBK stock, the 2020 Stock Assessment and Peer Review Reports did not recommend any management action for the stock at this time. Both reports did recommend an economic analysis be performed to provide advice on appropriate action to stabilize the fishery when abundance falls below the target.

SNE

For the SNE stock, the Assessment and Peer Review Reports did not recommend specific management measures to address the overfished stock status determination. However, in the definition of the abundance threshold reference point, the report states “significant management action to halt the decline of abundance and increase reproductive capacity and recruitment to the stock, such as a moratorium, is recommended if abundance falls below this threshold.”

Both Stocks

The Peer Review Panel agreed with the Stock Assessment Subcommittee recommendation to initiate an annual data update to monitor changes to stock abundance. The Panel supported annual updates of all indicators to provide insights into lobster and fishery dynamics, and the development of a science-based rule to specify conditions that would trigger an earlier than scheduled assessment. For example, if three of four indicators change from positive to neutral, the timing of the next benchmark assessment would be advanced.

The Panel also recommends continued use and exploration of the indicators to understand the relative merits of indicator-based management for various types of management controls. For example, preliminary analyses conducted during the review suggested relatively strong correlations between model outputs and select indicators that may be useful for management, with continued exploration.

Lastly, the Panel suggested a management strategy evaluation could inform appropriate management targets or measures to meet defined objectives.

Figure 1. Abundance for GOM/GBK Relative to Reference Points

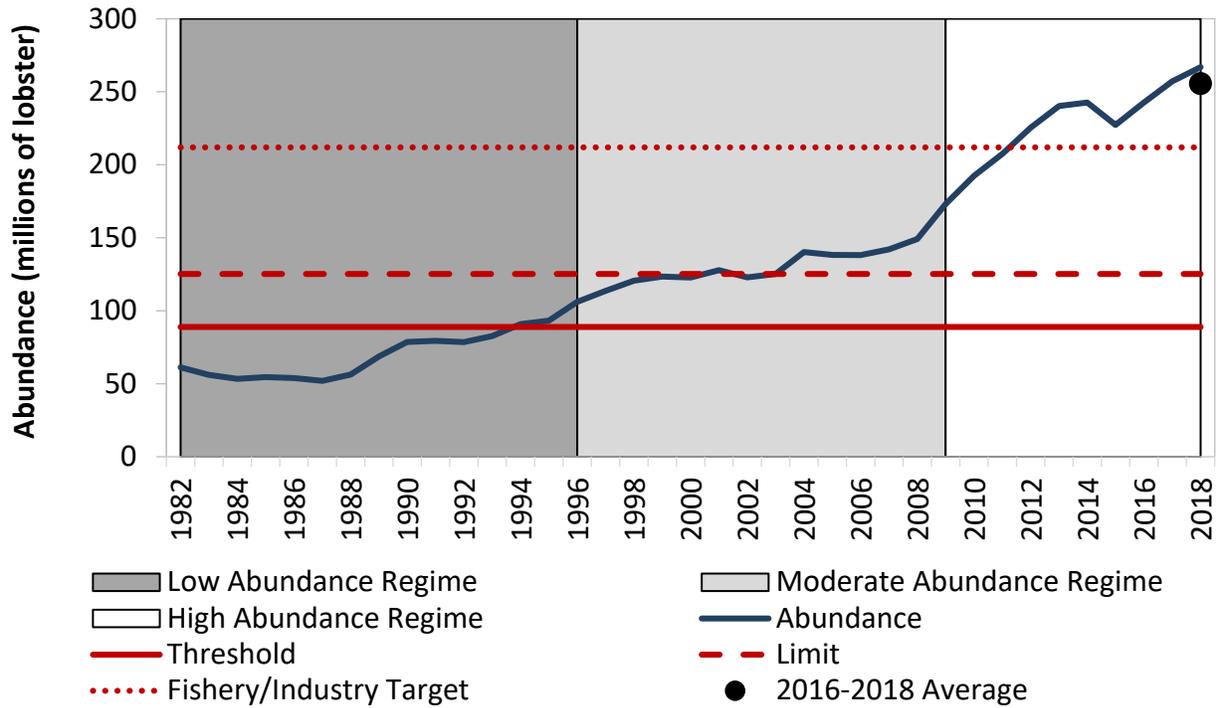


Figure 2. Exploitation for GOM/GBK Relative to Reference Points

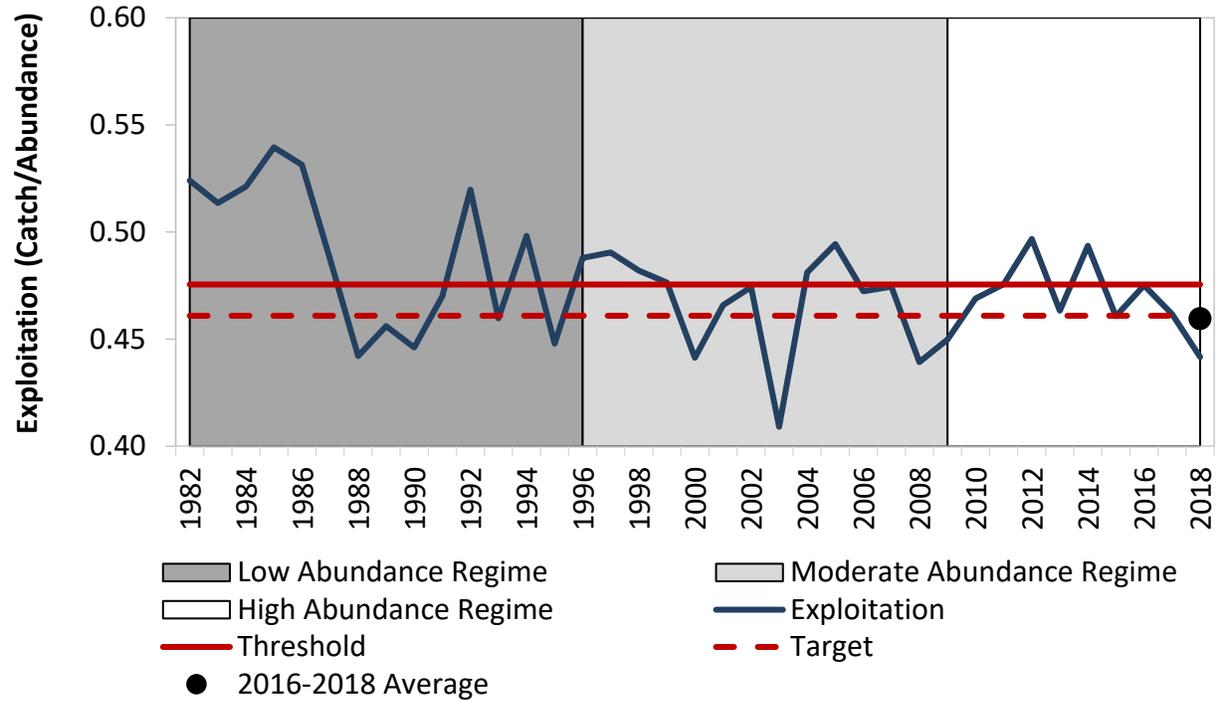


Figure 3. Abundance for SNE Relative to Reference Points - REVISED

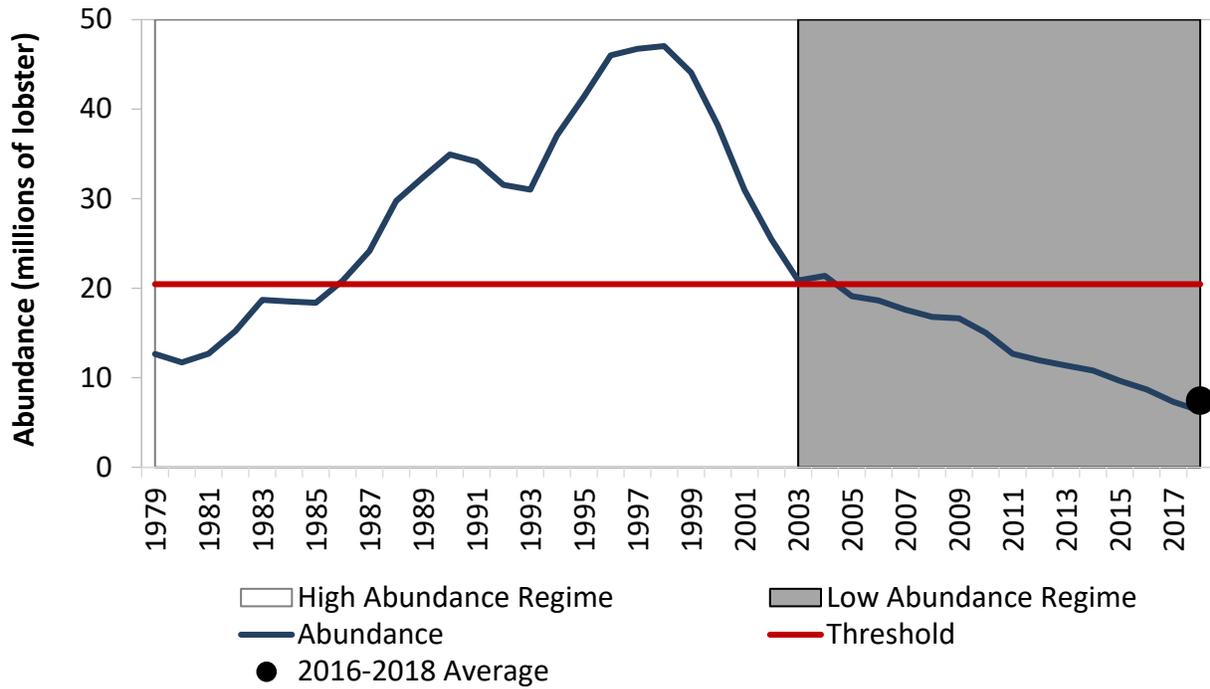
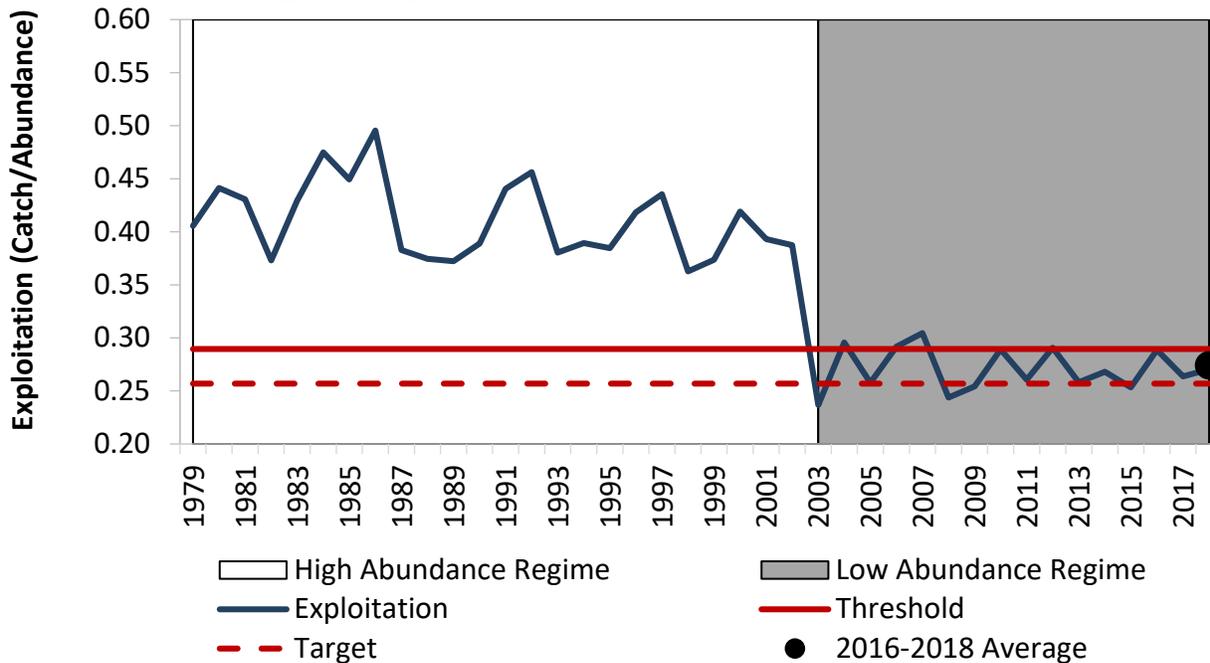


Figure 4. Exploitation for SNE Relative to Reference Points - REVISED



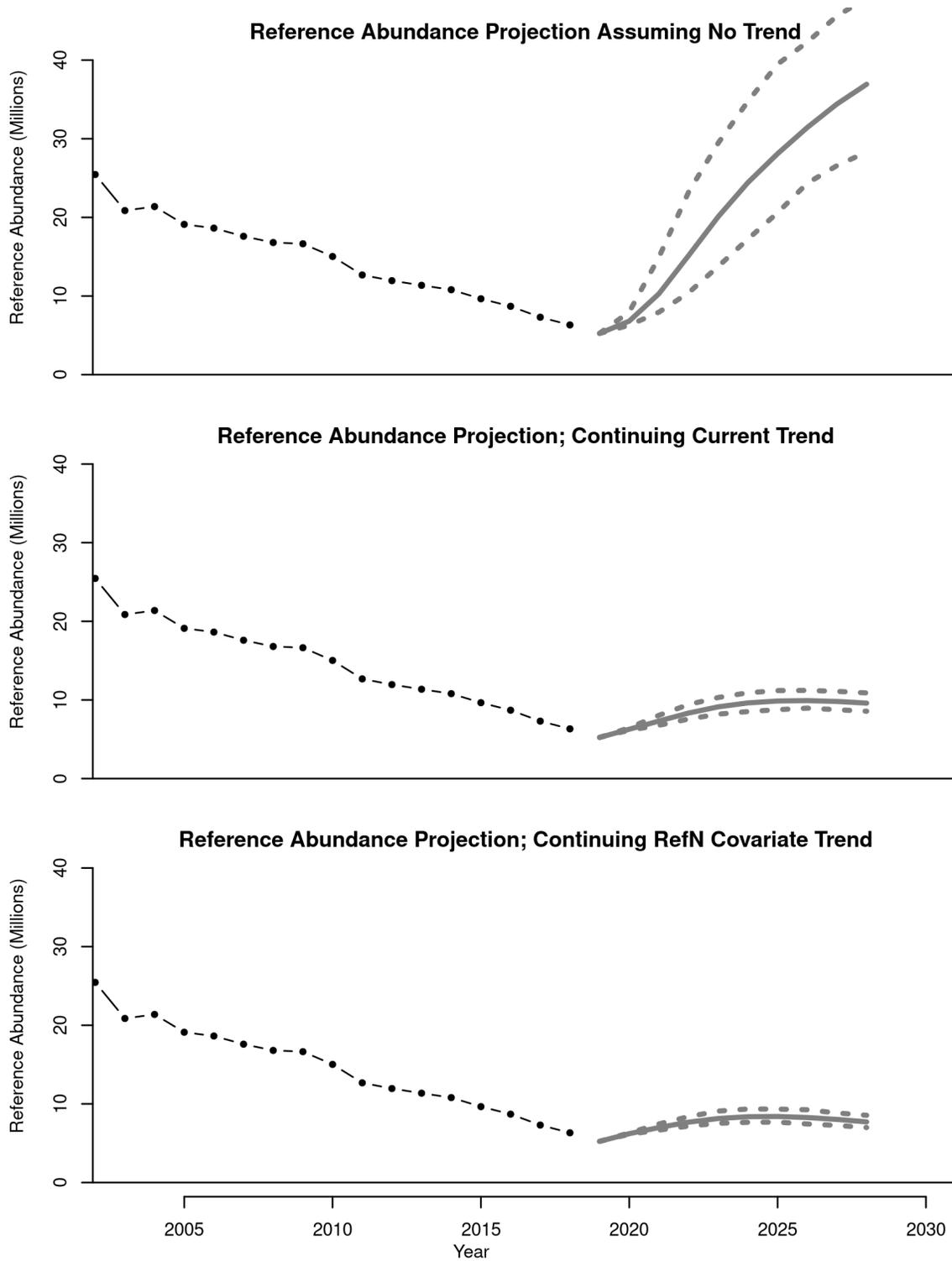


Figure 5. SNE reference abundance estimates for the current regime and projection scenarios for a no fishing mortality scenario. Source: 2020 American Lobster Benchmark Stock Assessment.



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MEMORANDUM

To: American Lobster Management Board
From: Management and Science Committee
Date: January 15, 2021
RE: Lobster Management Strategy Evaluation Work Plan

The ASMFC Management and Science Committee (MSC) formed a subcommittee during the 2019 Annual Meeting to develop a proposal for Management Strategy Evaluation (MSE) work on ASMFC-managed species. The MSC initially identified four priority species, including American lobster, considered the best candidate species for a MSE in the immediate future. Parallel to this development, Canada Department of Fisheries and Oceans (DFO) identified MSE as a priority to address management issues for Canadian stocks. Canada DFO work to develop an MSE has begun and would provide a valuable opportunity for collaboration between Canadian and U.S. lobster researchers, including the development of MSE tools. Both the subcommittee and MSC at-large agree American lobster is an ideal candidate for development of a MSE. The following prospective work plan outlines potential MSE focal areas, resource needs for a lobster MSE, associated workload tradeoffs for competing Lobster Board tasks/initiatives, and next steps if a MSE is identified as a priority by the Lobster Management Board.

Several potential focal areas for a MSE have been identified based on current lobster management issues, including: (1) stock productivity resiliency, (2) socio-economic resiliency, (3) whale interactions, (4) and climate change impacts.

Despite record high landings in recent years, the recently completed 2020 stock assessment found that YOY abundance indicators have been neutral or negative since the previous stock assessment (2015). The YOY signals may foreshadow future declines in recruitment, spawning stock, and ultimately landings. These YOY abundance conditions are similar to findings from the previous stock assessment that prompted the initiation of a Gulf of Maine stock resiliency addendum to proactively ensure sustainability of the spawning stock biomass. A MSE focused on stock resiliency could evaluate performance in achieving management objectives through various management actions, such as aligning management actions across Lobster Conservation Management Areas (of which was to be considered as part of the resiliency addendum).

The 2020 stock assessment also provided a socio-economic-based target reference point to indicate the need for management action to promote lobster industry stability before abundance declines to levels of biological concern (threshold and limit reference points). This newly developed reference point was in recognition of environmental drivers that negatively impacted the SNE stock and could similarly impact the GOM/GBK stock in the future under a warming climate. The assessment recommended socio-economic analyses be conducted following the stock assessment to refine this target reference point and provide guidance on appropriate management actions. A MSE focused on socio-economic resiliency could evaluate performance of achieving management objectives through management actions in response to abundance declines that would degrade the economic performance of the lobster industry.

Whale interactions with lobster gear have increasingly become a cause for lobster management responses and actions, so much so that development of the resiliency addendum was delayed to focus

M21-13

on this management need. A MSE incorporating whale interactions could evaluate performance of achieving management objectives through management actions in response to these whale interactions.

Environmental conditions, particularly temperature, are well-documented drivers of lobster population dynamics and these conditions are changing rapidly throughout the range of American lobster. The 2020 stock assessment highlighted how environmental drivers impact the stocks differently through space and time even within stock boundaries. Environmental conditions are projected to continue changing throughout the American lobster's range, leading to future impacts that are not well accounted for in advice from regular stock assessments. A MSE focused on climate change impacts could enhance MSEs of the previous focal areas by explicitly considering environmental processes driving population dynamics and industry operation.

The first focal area, stock productivity resiliency, is considered the most feasible for a near-term MSE given available data and models. The other three focal areas would require considerably more time and resources to incorporate into a MSE and potentially new data sources that are currently unavailable, such as complete harvester reporting. These focal areas may be best to pursue in future MSEs by expanding upon tools developed in an initial MSE.

Resource Needs:

State and Federal Agency Staff - TC and SAS workloads would be similar to a benchmark stock assessment. TC and SAS members would contribute to stakeholder recruitment, data gathering, technical aspects of the MSE, and training for using the MSE tools in future updates. (No Additional Cost)

ASMFC Staff - The workload would be similar to a benchmark stock assessment for the ISFMP Coordinator and Stock Assessment Scientist and would include project management, data gathering, workshop coordination, and report writing/publishing. (No Additional Cost)

American Lobster Board Members - The Board would need to provide guidance on the MSE based on management goals and review progress of the process during regular updates at Board meetings. Additionally, a working group of Board members would be needed to participate in MSE meetings and workshops throughout the process. (No Additional Cost)

Facilitator - A facilitator would be needed to facilitate workshops and elicit stakeholder input for inclusion in the MSE. If a contracted facilitator is necessary, a funding source is needed. (\$25,000)

Travel – Meetings to elicit stakeholder input and participation in the MSE. (\$35,000)

Biological/Environmental Model Development – Model developers are needed to build new models and/or synthesize current models to describe biological and environmental processes. This role would need to be filled by contracted personnel, current technical personnel on the TC/SAS, or a combination of both. The needs for this role, and therefore resource needs for a MSE, will be dependent on the focal area and objectives being pursued. For example, whale interaction and climate change focal areas would likely require additional modeling expertise from whale biologists and climate scientists, respectively, outside the lobster modeling community. If contracted personnel are necessary (e.g., Dr. Yong Chen, University of Maine), a funding source needs to be identified. Funding would likely be needed for multiple years for a programmer and supervisory support.

Socio-economic Model Development - Model developers are needed to build new models and/or synthesize current models to describe socio-economic processes of the lobster industry. Lobster industry socio-economic expertise is limited and data access might be a concern, so this role would likely need to be filled by contracted personnel with appropriate clearance. One year of funding has been confirmed for new socio-economic research at the Northeast Fisheries Science Center to support a

lobster MSE. Research will focus on model conceptualization and identification of data gaps. There is potential for extended funding of this research if a MSE is identified as a priority by ASMFC. If contracted personnel outside personnel currently funded through the NEFSC are necessary, a funding source needs to be identified. Funding would likely be needed for multiple years.

Workload/Resource Tradeoffs:

- Potential Jonah crab benchmark stock assessment being considered for initiation in August 2021
- Development of a resiliency addendum
- Potential work to support management response to the 2020 stock assessment
- Ongoing and future whale interaction work
- Next lobster benchmark stock assessment to be completed in 2025

Next Steps:

- Identify priority level of a lobster MSE through consultation with the management board.
- Identify roles and responsibilities for all personnel and potential funding sources for contracted personnel.
- Identify timeline for MSE milestones and completion.



Atlantic States Marine Fisheries Commission

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MEMORANDUM

January 12, 2021

To: American Lobster Management Board
From: Tina Berger, Director of Communications
RE: Advisory Panel Nomination

Please find attached a new nomination to the Johan Crab Advisory Panel – Jon Williams, a commercial offshore trap fishermen representing the State of Rhode Island. Please review this nomination for action at the next Board meeting.

If you have any questions, please feel free to contact me at (703) 842-0749 or tberger@asmfc.org.

Enc.

cc: Caitlin Starks

M21-07

Jonah Crab Advisory Panel

Bolded names await Board review and approval

January 12, 2021

Maine

Chris Bates

32 Edgewood Lane

Brooksville ME 04617

cbates123@myfairpoint.net

- Awaiting confirmation from ME regarding nomination

New Hampshire

Todd Richard Ellis (manager for offshore lobster/crab boats)

4 Laurel Lane

Somersworth, NH 03878

Phone: 603.396.0993

tellis@littlebaylobster.com

Appt Confirmed 5/4/15

Massachusetts

Marc Palombo (comm. lobster traps)

4 Popes Meadow

Sandwich, MA 02563

Phone (home): 508.888.5714

Phone (cell): 508.648.0261

calicolob@comcast.net

Appt Confirmed 10/22/18

Captain Jan Horecky (comm traps/offshore SNE)

29 France Street

Middleboro, MA 02346

Phone: 774.766.8466

jhorecky@verizon.net

Appt. Confirmed 5/4/15; 8/18

Rhode Island

Brian Thibeault (comm trap/inshore SNE)

40 lakeside Drive

Charleston, RI 02813

Phone: 401.932.8250

Kwe5tbos90@yahoo.com

Appt Confirmed 5/4/15

Jon Williams (comm trap/offshore)

132 Herman Melville Blvd.

New Bedford, MA

Phone: 508.951.4788

jwilliams@atlanticredcrab.com

New York

Vacancy

Maryland

Earl Gwin (comm lobster trap/LCMA 5)

10448 Azalea Road

Berlin, MD 21811

Phone: 401.251.3709

jeanenegwin@verizon.net

Appt Confirmed 11/2/15



ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (All Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2). In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.**

Form submitted by: Barbara Cournoyer State: RI
(your name)

Name of Nominee: Jon Williams

Address: 132 Herman Melville Blvd, 53 Log Cabin Rd

City, State, Zip: New Bedford, MA: Westport, ME

Please provide the appropriate numbers where the nominee can be reached:

Phone (day): 508-951-4788

Phone (evening): 508-951-4788

FAX: N/A

Email: jwilliams@atlanticredcrab.com

.....
FOR ALL NOMINEES:

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.

- 1. Jonah
- 2. _____
- 3. _____
- 4. _____

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?

yes _____ no _____

3. Is the nominee a member of any fishermen's organizations or clubs?

yes X no _____

If "yes," please list them below by name.

Atlantic Red Crab Harvesters Assoc.
Large Whale Take Production Team
Industry Advisor for AP Committee

NEFMC Halibut Committee

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

Jonah Crab

Eels

Atlantic Red Crab

Lobster

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

Jonah Crab

King Crab, Snow Crab

Atlantic Red Crab

Halibut, Sea Urchins, Swordfish

Lobsters, Eels

Rock Sole, Alaskan Cod, Pollock

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business? 2007 years
2. Is the nominee employed only in commercial fishing? yes X no _____
3. What is the predominant gear type used by the nominee? Traps
4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)? Off Shore

FOR CHARTER/HEADBOAT CAPTAINS:

1. How long has the nominee been employed in the charter/headboat business? 2007 years
2. Is the nominee employed only in the charter/headboat industry? yes _____ no _____
If "no," please list other type(s)of business(es) and/occupation(s): _____

3. How many years has the nominee lived in the home port community? _____ years
If less than five years, please indicate the nominee's previous home port community.

FOR RECREATIONAL FISHERMEN:

1. How long has the nominee engaged in recreational fishing? _____ years
2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? yes _____ no _____

If "yes," please explain.

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing?
2007 _____ years

2. Is the nominee employed only in the business of seafood processing/dealing?

yes _____ no _____ If "no," please list other type(s) of business(es) and/or occupation(s):

3. How many years has the nominee lived in the home port community? <1 _____ years

If less than five years, please indicate the nominee's previous home port community.

New Bedford, MA, Westport Island ME, Hampton VA

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? _____ years

2. Is the nominee employed in the fishing business or the field of fisheries management?
yes _____ no _____

If "no," please list other type(s) of business(es) and/or occupation(s):

FOR ALL NOMINEES:

In the space provided below, please provide the Commission with any additional information which you feel would assist us in making choosing new Advisors. You may use as many pages as needed.

In addition to the total amount of years fishing, processing and boat ownership with extensive indus:



Nominee Signature: _____

Date:

Name: **Jon Williams**

(please print)

COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)

State Director

State Legislator

Governor's Appointee

Atlantic States Marine Fisheries Commission

Winter Flounder Management Board

February 2, 2021

1:30 – 2:15 p.m.

Webinar

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order (*D. Borden*) 1:30 p.m.
2. Board Consent 1:30 p.m.
 - Approval of Agenda
 - Approval of Proceedings from October 2020
3. Public Comment 1:35 p.m.
4. Consider Specifications for the 2021 Fishing Year **Final Action** 1:45 p.m.
(*D. Colson Leaning*)
 - Technical Committee Report
 - Advisory Panel Report
5. Other Business/Adjourn 2:15 p.m.

MEETING OVERVIEW

Winter Flounder Management Board

Tuesday February 2, 2021

1:30 – 2:15 p.m.

Webinar

Chair: David Borden (RI)	Technical Committee Chair: Paul Nitschke (NEFSC)	LEC Representative: Kurt Blanchard
Vice Chair: William Hyatt (CT)	Advisory Panel Chair: Bud Brown	Previous Board Meeting: October 19, 2020
Voting Members: ME, NH, MA, RI, CT, NY, NJ, NMFS, USFWS (9 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from October 2020

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time should use the webinar raise your hand function and the Board Chair will let you know when to speak. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance, the Board Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Consider Specifications for the 2021 Fishing Year (1:45 – 2:15 p.m.)

- The Technical Committee met on January 6th to review the Gulf of Maine and Southern New England/Mid-Atlantic stock assessments, New England Fishery Management Council recommendations for federal specifications, and commercial and recreational fishery trends. After reviewing these items, the TC recommended no changes to the state water specifications for the 2021 fishing year. **(Supplemental Materials)**
- The Advisory Panel met on January 14th to discuss current management issues and provide recommendations for state water specifications for the 2021 fishing year. **(Supplemental Materials)**

Presentations

- Technical Committee and Advisory Panel Meeting Summary by D. Colson Leaning.

Board Actions for Consideration

- Consider GOM and SNE/MA winter flounder specifications for the 2021 fishing year.

5. Other Business/Adjourn

Winter Flounder Technical Committee Task List

Activity Level: Low

Committee Overlap Score: Low

Committee Task List

- There are no on-going tasks for this Winter Flounder TC at this time
- Annual state compliance reports are due December 1

TC Members

Paul Nitschke (NEFSC – Chair), Tony Wood (NEFSC), Dr. Robert Pomeroy (UCONN), Alex Hansell (MA DMF), Rebecca Heuss (NHFG), Timothy Daniels (NJ DEP), Paul Nunnenkamp (NYS DEC), Richard Balouskus (RI DEM), David Ellis (CT DEEP), Joseph Myers (ACCSP)

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
WINTER FLOUNDER MANAGEMENT BOARD**

**Webinar
October 19, 2020**

These minutes are draft and subject to approval by the Winter Flounder Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the Winter Flounder Management Board Webinar
October 2020

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INDEX OF MOTIONS

1. **Approval of agenda** by Consent (Page 1).
2. **Approval of Proceedings from October 2019** by Consent (Page 1).
3. **Move to nominate Bill Hyatt as Vice-Chair of the Winter Flounder Board** (Page 10). Motion by Megan Ware; second by Cheri Patterson. Motion carried (Page 10).
4. **Motion to adjourn** by Consent (Page 10).

ATTENDANCE

Board Members

Megan Ware, ME, proxy for P. Keliher (AA)	Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Cheri Patterson, NH (AA)	Matt Gates, CT, proxy for J. Davis (AA)
G. Ritchie White, NH (GA)	William Hyatt, CT (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	John McMurray, NY, proxy for Sen. Kaminsky (LA)
Dan McKiernan, MA (AA)	Joe Cimino, NJ (AA)
Raymond Kane, MA (GA)	Tom Fote, NJ (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Adam Nowalsky, NJ, proxy for Asm. Houghtaling (LA)
Conor McManus, RI, proxy for J. McNamee (AA)	Mike Millard, USFWS
David Borden, RI (GA)	

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Paul Nitschke, Technical Committee Chair

Staff

Robert Beal	Jeff Kipp
Toni Kerns	Laura Leach
Tina Berger	Savannah Lewis
Maya Drzewicki	Sarah Murray
Pat Campfield	Caitlin Starks
Dustin Colson Leaning	Deke Tompkins
Chris Jacobs	Geoff White

Guests

Karen Abrams, NOAA	Cynthia Ferrio, NOAA	Gerry O'Neill, Cape Seafoods
Pat Augustine, Coram, NY	Tony Friedrich, SGA	Derek Orner, NOAA
Richard Balouskus, RI DEM	Willy Goldsmith, SGA	Tara Scott, NOAA
Linda Barry, NJ DEP	Melanie Griffin, MA DMF	Melissa Smith, ME DMR
Peter Benoit, Ofc. of Sen. King	Carol Hoffman, NYS DEC	Corinne Truesdale, RI DEM
Jeff Brust, NJ DEP	Amanda Hooper	Beth Versak, MD DNR
Mike Celestino, NJ DEP	Rob LaFrance, Quinnipiac Univ	Mike Waine, ASA
Heather Corbett, NJ DFW	Wilson Laney	Anthony Wood, NOAA
Jessica Daher, NJ DEP	Chip Lynch, NOAA	Christopher Wright, NOAA
Aubrey Ellertson, CFR	John Maniscalco, NYS DEC	Erik Zlokovitz, MD DNR
Catherine Fede, NYS DEC	Jerry Morgan	Rene Zobel, NH F&G
Allison Ferreira, NOAA	Allison Murphy, NOAA	

The Winter Flounder Management Board of the Atlantic States Marine Fisheries Commission convened via webinar on Monday, October 19, 2020, and was called to order at 11:00 a.m. by Chair David V. Borden.

CALL TO ORDER

CHAIR DAVID V. BORDEN: First start with the Administrative Issues.

APPROVAL OF AGENDA

CHAIR BORDEN: You have an agenda that's been distributed. Are there any comments, changes, additions, deletions to the agenda, and if not any objections to following the agenda as distributed? Any objections? I see no hands up. We'll take the agenda in the order that it was distributed.

APPROVAL OF PROCEEDINGS

CHAIR BORDEN: The proceedings from February, 2019 has been distributed with the meeting packet. Any comments on the proceedings? If you want to comment, please raise your hand. I see no hands up. Any objections to approving those proceedings as distributed? There are no hands up, so the proceedings stand approved.

PUBLIC COMMENT

CHAIR BORDEN: We afford the public an opportunity to comment, and this is the time. If you have comments, it's supposed to be for the purpose of commenting on items that are not on the agenda. We would ask that you keep your comments brief. Any members of the public with a hand up? I can see none.

Toni, if you see someone with a hand up, please interrupt me and I'll call on them.

REVIEW OF THE 2020 ASSESSMENT UPDATES FOR THE GULF OF MAINE AND SOUTHERN NEW ENGLAND FLOUNDER STOCK

CHAIR BORDEN: There are no members of the public with a hand up, so I'll take the next item on the agenda, which is Review of the 2020 Assessment Updates for the Gulf of Maine and Southern New England Flounder Stock. We have two presentations, I think I'll start with the first one, which is Paul.

PRESENTATION OF GULF OF MAINE STOCK ASSESSMENT REPORT

MR. PAUL NITSCHKE: This is going to be a summary of the Gulf of Maine winter flounder Management Track Assessment, which was recently reviewed in mid-September. This was a Level 2 Assessment, a Level 2 Review. The last assessment was in 2017, the 2017 Operational Assessment. This Assessment is a 30 plus centimeter Survey Area-Swept Assessment.

There is no analytical model for this stock. Just to let people know, there is more information on the Data Portal at the Northeast Fisheries Science Center webpage. There is a document on there that has tables and figures, if people are interested in more of the gory details than this. As I said, this is a 30-centimeter Area-Swept Assessment.

It was developed as a Plan B in SARC-52 in 2011. It has been updated several times, in 2014, '15, and 2017. This was the first Area-Swept Assessment for groundfish, so there is a little bit of history with this one. For stock status, it has not changed. Overfished status is unknown, and overfishing is not occurring. This stock is not in the rebuilding plan. It was never declared overfished. I'll give you a little history on this assessment. In GARM III and at SARC-52, the analytical models did not pass review. We tried many different models. However, all the models have severe retrospective issues.

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Basically, there is a conflict between the large change, the large reduction in catch over the time series, with little change in the survey indices, and/or the size structure in the commercial removals, and also in the surveys. We're now basing this assessment on just the Survey Area-Swept direct estimate of biomass from the surveys.

Just to remind people, this is the Gulf of Maine stock, which was historically the smallest of the three winter flounder stocks north of Cape Cod. Almost all of the catch comes out of Statistical Area 514, coming out of like Mass Bay, Cape Cod Bay, Stellwagen Bank. Almost all the removals are coming from that small area.

For this assessment we updated the raw survey indices for the Northeast Fisheries Science Center, Mass DMF, and the Maine-New Hampshire Survey. We estimate the 30 plus Area-Swept biomass from 2009 to 2019. This is done using non-overlapping strata between those three surveys, and we updated the catch from 2009 to 2019 for the commercial and recreational landings and discards.

Here are the landings trend. Since the 1980s you can see there has been a large decline in the landings over the time period. The landings in 2019 was at a record low for the stock. On the bottom there is just the proportional makeup of the marking categories in the commercial landings.

You can see there really isn't that much of a change in the marking category makeup, which is part of the reason why the models have some difficulty, since there isn't a lot of dynamics in the change in the size of the fish coming out of the removals. Here is a breakdown of the total catch. For this assessment we updated the recreational estimates using the new calibration coming out of MRIP.

That has changed the perception a little bit for this stock. Those recreational estimates pretty

much have doubled. Most of the recreational removals were in the 1980s. You can see now with those new estimates, the recreational component is actually larger than the commercial component during that time period.

However, starting in the early nineties, the recreational catch decreased to very low levels since then. Those numbers still doubled, but there is just doubling of a very small number, so it's not as dramatic. Commercial removals just continue to decline to a point now where in 2019 we have a record low catch for Gulf of Maine winter flounder. I think it was around 109 metric tons.

Here is just a comparison between the new and old MRIP estimates. On top of the landings you can see how those estimates on average doubled in size with the new calibration. On the bottom the B2s also have a pretty big change. However, keep in mind that the B2s are a very small component of the recreational removals, given this 15 percent mortality rate on the discards. This plot just shows the combined effect of landings and B2s added together. The same sort of story as before. Here are the raw survey indices on top of the Northeast Fisheries Science Center Bottom Trawl Survey. In the middle is the Mass DMF Survey, spring and fall, and on the bottom is the Maine-New Hampshire Survey.

In general, you can see these trends are fairly flat over the time period. From the 1980s to now they continually catch on average about the same amount of fish. This assessment now is based on the Survey Area-Swept. We don't have a survey that covers the entire stock, so we use three different surveys with none overlapping strata to hopefully cover the whole stock as best we could.

This table shows the breakdown of each survey contributing to that total estimate. On the top row is the survey area in nautical square miles.

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The Mass DMF survey in the middle is the smallest area wise, however that survey is important for winter flounder. They catch a large amount of fish in that small area.

The Maine-New Hampshire survey catches a lot of fish, and there is a large area. However, most of the fish in that survey are smaller than 30 centimeters, so it doesn't contribute as much. The next row is just the total footprint, the assumed footprint for each tow on the wingspread. Then the expansion factor is just the total area divided by that footprint.

Here are the length frequencies coming out of the Maine-New Hampshire Survey, and as you can see the numbers drop off very quickly when you get up to 30 centimeters, and there were a lot of fish caught in that survey. For new sources of information that went into this assessment, we had more tow data from the twin-trawl experiment, the efficiency experiment.

Tim Miller was kind enough to update the estimates of efficiency using new model and increased sample size. That work is summarized in the working paper on the data portal. We also updated the MRIP recreational catch. However, just keep in mind that this assessment now is 100 percent survey based, so those estimates don't really affect the assessment.

The only thing they can affect is whether the stock is overfishing or not, but that has not changed. This is the basic equation for the exploitable biomass. We're calling exploitable biomass 30 plus centimeter biomass index per tow, multiply it by this expansion factor, which is the total survey area divided by the total footprint times Q. Q in this case, you can think of Q as the efficiency of the survey gear between the wingspread.

It's an important assumption, the exploitable biomass is pretty sensitive to this assumption.

The exploitation rate is then just simply the catch over this 30-centimeter biomass estimate. The biological reference points were based on F40 from a length-date yield per recruit model, with the same 30-centimeter knife edge selectivity pattern.

These are the inputs that went into the yield per recruit back in SARC-52. It's using the same M and that 30-centimeter selectivity, and the long-term growth goes into this estimate. Using many years of age data go into that estimate. These are the plots that Tim produced on the efficiency. He accounted for day/night effects and also length effects in the estimates. On the left is the efficiency during the day. Keep in mind we're only using 30 plus centimeter cutoff here. During the day there is a bigger difference in efficiency between the Bigelow gear and this more efficient flat mat used during the experiment. However, at night there wasn't really that much of a difference between the two gear types.

Out of Tim's work he accounts for specific tow day/night effect and length effects, and comes up with these implied efficiencies coming out of the survey for each year and each survey. We basically took the average efficiencies over this time period as an estimate of Q, to go into our calculations of Areas-Swept.

This is what was updated in this assessment. To give you some history on how the Q changed in this assessment, back at SARC-52 there wasn't any information really on what the efficiency should be. The Review Panel at SARC-52 came to this conclusion of assuming a Q of 0.6. At that time, we presented a range of different Qs and the effects on the assessment.

In 2017 we had some experimental data from the Sweep Study. That work at the time estimated a Q of 0.866. However, the sample size was a little bit low at that point. That Q increased from 0.6, so when the Q increases the biomass estimate decreases. For this update

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we have some more information, and the Q estimate for this update went down to 0.71, so it's a little bit of decrease in the Q. That will increase the biomass estimate coming out of this method.

Here are the total estimates of 30 plus biomass from the spring and fall survey. On the top is the spring survey, and the colors on the bars represent the amount of fish in each survey. In the spring you can see that there is a greater proportion of the stock within the state surveys, which makes sense. In the spring the fish are more inshore, spawning in the shallows, so there is a greater proportion in the state surveys.

In the fall there is a greater proportion in the Northeast Fisheries Science Center survey. In the past we used the fall survey as the estimate, because there was some concern that we're missing fish in the spring, with some fish being inside the estuaries where there is no survey conducted. However, as we update this assessment, the estimates between the spring and the fall are very similar at this point.

However, we're still using the fall survey, because we have some estimates of efficiency of the gear for the Center Survey, where we don't have any experiments on the state surveys. We're basically just using the same Q for the state survey gear, even though that gear is quite a bit different than the Center gear. But it's a little more uncertainty in the spring estimates, because a greater proportion is in the state surveys, where we don't have that information on efficiency.

We'll still using the fall survey for the catch advice. However, it doesn't really matter that much, because the two surveys are producing very similar results. Here are the exploitation rates coming out of the two surveys, and they are pretty much lined up pretty well. The exploitation has been low over the entire

Bigelow time series, far below the overfishing definition of 0.23.

One of the sources of concern is the decreasing biomass, you know from the beginning of the time series under these low exploitation rates, which doesn't really follow what you would expect out of the population dynamics. That can also be seen in these plots. On the left is the biomass trend. You can see that declining trend in the biomass under the low exploitation rates on the right. One of the changes going forward coming out of this review. The reviewers suggested using two years of information to inform the catch advice.

In the past we all just used the terminal year for the three surveys. That basically results in ignoring every other year. To stabilize the catch advice, we're now using a two-year average using all the new information, every time the assessment is updated going forward. It doesn't really have a huge effect, but it should stabilize the catch advice going forward.

As seen in this plot, you can compare the two-year average point estimate versus the annual estimates coming out of the fall survey. The ABCs for the stock are basically calculated as 75 percent of the exploitation rate at 40 percent, multiplied by this 30 plus Area-Swept biomass estimate. At this point we're using the average of two fall surveys for that estimate.

For sources of uncertainty, as I said the biomass and exploitation rates are sensitive to the Q assumption. We do have some more information on that with this assessment. That should improve things a little bit. However, we don't have any information on the efficiency of the state surveys, so that still remains a source of uncertainty.

As a general concern, there is still some concern with very low exploitation rates and little response to the biomass or the indices for the stock. Why that is occurring is not really

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known. The other concern for this method is we don't have a biomass status coming out of this method. That is the end of my little summary, I can take any questions.

CHAIR BORDEN: Questions for Paul. Any hands? If you want to ask questions, please put up your hands. We have no hands up, at least that I can see. Toni, do you see any hands up?

MS. TONI KERNS: I do not, David.

CHAIR BORDEN: Okay, so Paul, let me just ask a question in regards to rebuilding. You just expressed the point that I was going to make. Is it possible to increase this population, or is this a case where we have environmental drivers that are pretty much determining what the status of the biomass is? Are there ways we could rebuild this?

MR. NITSCHKE: It's not really clear why the catch keeps going down, but it doesn't seem to affect the survey trends. You don't really see an effect on the size structure. That has remained constant since the 1980s overall for this stock. Now that's not true for the Southern New England stock. This stock was never put into a rebuilding plan. It was never declared overfished.

But there is really, I mean there is no mandate to rebuild the stock. However, we don't really have a biomass target out of this method, so it's kind of a big unknown. One of the things that you hear the conflicting trends between the recreational fishery and the commercial fishery on how well the stock is doing. One of the things that could be occurring is just a guess at this point, is that perhaps in the 1980s more of the stock was in shallower water, whereas now if there was a shift into deeper water, that would explain why the survey trends have remained fairly constant, whereas there is a bigger decline inside the estuaries that we don't really have any information.

CHAIR BORDEN: Thank you, I've got Dan McKiernan.

MR. DANIEL MCKIERNAN: I have two questions for Paul. First, what is the workload associated with conducting an efficiency study for the state trawl surveys, and the second one I would ask Paul to comment on the problems that are going to be created by this year's cancellation of the trawl surveys, and with an unknown restarting time for those surveys. What is the workload associated with these efficiency studies, and comment on the lack of trawl surveys this year.

MR. NITSCHKE: It's a pretty good workload for the efficiency studies. Basically, you need that. All this work was done on the Twin Fall, so you need a specialized, where they can tow two nets at the same time. If this work would be done probably you need a specific vessel for that. Instead of using the Bigelow Net, you would use the state survey net to compare to the industry standard for the most efficient gear that they use.

But you need a good amount of tows within an area where they have pretty good catch rates for winter flounder. In terms of going forward, next year if we don't have any surveys, I mean I guess we lose some information here. I guess we can't use an average, we're back to using a single year for the catch advice. I mean it causes some uncertainty, but we just can use the information we've got going forward.

**PRESENTATION OF SOUTHERN NEW
ENGLAND/MID-ATLANTIC
STOCK ASSESSMENT REPORT**

CHAIR BORDEN: Does anyone else have a question? If not, we'll move on to the Southern New England stock. Okay, so let's do that, move on to the Southern New England stock. The next presentation is by Mr. Wood.

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MR. ANTHONY WOOD: I'm going to give a quick run through just like Paul did of the Southern New England winter flounder assessment. Again, as Paul mentioned, the full details can be found on our data portal, along with tables and figures and model files, as well as some working papers that will provide a lot of information to some questions that you might have.

This stock was last assessed in 2017 for the Statistical Catch at Age Model. The reference points at the time were FMSY reference points with an FMSY of 0.34, and an SSB_{msy} of about 25,000 metric tons. The stock status was overfished but overfishing was not occurring. The first term of reference from this assessment was to estimate catch from all sources.

This model uses commercial landings, commercial discards, recreational landings and recreational discards. For the purpose of this update we used the new calibrated MRIP estimates for the recreational information. All these sources of data are compiled into a single fleet to be input into the model.

For commercial landings in 2019, almost the lowest in the time series. If we ignore the years of moratorium around 2010, we're at the lowest in the time series. Our landings were 202 metric tons for 2019. Discards were 105 metric tons, well below the time series average. Recreational landings were at a time series low as well, 500 kilograms were recreational landings, so recreational landings have basically fallen off of a cliff for this stock, and have remained low since about all throughout the 2000s.

Represented in red here are the old MRIP numbers, and the blue shows how the new MRIP calibrations scaled up both landings and discards in the next plot, very similar to how it was pictured in Gulf of Maine. For 2019 recreational discards were 2.4 metric tons. Again, well below the time series average.

Presented out of the total catch, looking at total catch using old MRIP numbers and the new MRIP calibrated data that actually went into this assessment update. The 2019 total catch was 310 metric tons. Total catch components, you can see that recreational landings have fallen off drastically, almost 98 percent is commercial data now going into this assessment.

The next term of reference was to evaluate the indices. There are now 12 indices that go into this assessment, some regional indices, some state-specific indices, and a couple of young of the year indices. We have three Science Center surveys. For this update we have brought in the NEAMAP spring survey.

We also have spring surveys from Massachusetts, Rhode Island and Connecticut, two surveys from New Jersey and one from the University of Rhode Island, as well as two young of the year surveys from Massachusetts and Connecticut. The next few slides are going to be scaled indices. First slide here is the four regional survey indices. That would be the three Science Center surveys and the NEAMAP spring survey.

They also are fairly similar defined starting at about 2000 down to present. We see a similar thing in all the state surveys. I know the plot gets messy, but if you squint you can see over the entire time series a general decline for all these surveys, down to almost time series low values for every survey in 2019.

Then finally, the two young of the year surveys, Massachusetts is pretty flat over the time series. Other than a couple of peaks for Connecticut, we also see somewhat of a decline from late '90s, 2000 to 2019. That covers the fishery dependent and independent data run of the assessment. Biological data is carryover from the benchmark in 2011, that SARC-52.

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We assume a constant M of 0.3. Maturity information from 1982 to 2008 from the Massachusetts spring survey was used. These input values were retained for this 2020 operational. Now the meat of the assessment comes in this Term of Reference 3. This is actually run the model and get the model estimates, and include any bridge runs.

Now we're kind of limited by what we can do for these operational assessments, but this assessment was a Level 3, so I was able to make quite a few changes. Most of the changes that I made were spurred on by comments from the New England Fisheries Management Council SSC. In 2017 the operational model configuration was the same as the model used from SARC-52. The single fleet that included commercial and recreational landings and discards. We had two selectivity blocks, 11 survey indices, and a bunch of penalties. Most of these penalties were actually unnecessary if they weren't turned on on the objective function. For one of the steps here in my model bridge, I turn those off, and I'll get to that. To build a bridge from the SARC-52 model to our current assessment model, I started with the continuity run and updated that through 2017, since the 2017 update only included data through 2016.

Then I switched that model over to new MRIP calibrated data, and updated that through 2019, and turned off or removed the needless penalties. That had no effect on the model estimates. Moving on to the next step, these are the changes that were recommended by the SSC at the last Panel Review, and that was to include a new selectivity block.

I chose from 2010 to present, to try and get some even temporal resolution in these selectivity blocks, and also to include a flat top of fleet selectivity, as opposed to estimated selectivity at age. This was to get rid of some cryptic biomass that is showing up in the model.

Then the final thing was to add the new NEAMAP Survey.

That brought us to a final model. With a single fleet using commercial and recreational landings and discards, three selectivity blocks with flat top selectivity, as opposed to selectivity at age. Twelve survey indices and a single penalty to start off the model with numbers in Year 1. I'm not going to get into very much, if any, of the model diagnostics.

Again, they're all presented in the full presentation that I presented to the Review Panel. They are all available on our portal, and I believe they were made available to the Board. You can see that adding a third selectivity block or having any selectivity blocks at all, doesn't really have that much of an impact.

Flat top selectivity is pretty similar between the three time periods chosen. The 2019 biomass estimates, total biomass was estimated at about 5,200 metric tons, with SSB at about 3,700 metric tons. F was at the lowest of the time series, at a value of 0.077. Recruitment has remained pretty low throughout the 2000s, and 2010s. Current estimate is 2.3 million fish, not quite the lowest in the time series.

The retrospective bias has increased a bit. I feel like it's mostly a result of forcing that flat top on the fleet selectivity, although the patterns are still considered minor for F and SSB, so we didn't make any retrospective adjustments when it came to determining stock status. Moving on to Term of Reference 4 was to re-estimate our update to reference points.

Previous reference points, again coming out of methodology developed at SARC-52, were based on a Beverton-Holt stock recruit relationship. The SSC felt that these were providing recruitment estimates that were unrealistic, given the current recruitment regime that we seem to be in, so we moved away from using this Beverton-Holt stock

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recruit relationship, and went to a proxy reference points.

Previously the stock was overfished, but overfishing was not occurring, and reference points were based on stock recruit relationship. Here is a plot showing the stock recruit relationship. It is based on a fixed steepness, and it is probably not the best model to fit to these data. It almost appears that the Southern New England has a linear relationship in the stock recruit data. Again, we moved away from that for this assessment to develop reference points. Using SPR based reference points F40 percent came in at 0.284 compared to 0.26, which is what it would have been if we used the old methodology.

Spawning stock biomass reference point at 12,000 metric tons currently sit at 27 percent of the F threshold, 30 percent of the target, and 60 percent of the SSB threshold. The stock remains in the same status. We are currently overfished, but overfishing is not occurring, and there was a minor retrospective bias, so no adjustment was made.

Some of the sources of uncertainty carry over from SARC-52. We have a fixed natural mortality based on longevity equations. The recreational discard length information is pretty bad, and we do have a retrospective bias that is bordering on a major retrospective, so we might have to make adjustments going forward.

Then some research needs just listed from panelists comments over the years, additional studies on maximum age, incorporating new information on maturity, looking at migration rates between stocks and additional investigations into sub-stock structure, and incorporate an environmental influence on a stock recruit relationship. Some of these have been looked at, some of them are ongoing, and there have been recent publications for a couple of these. With that I'll take any questions you might have.

CHAIR BORDEN: All right, questions for Tony? I've got Conor McManus, Dr. McManus.

MR. CONOR McMANUS: Thank you, Tony, for your presentation. I was just curious on your last bullet. Some of the research as of late has shown environmentally explicit relations with stock recruit dynamics, and I was just curious, has the Winter Flounder Working Group or yourself thought or discussed future plans to include that work, and how it might improve or change our perceptions on projections?

MR. WOOD: Yes, so the Bell et al paper in 2018 is a starting point, really for this work going forward. Rich and I, Rich Bell and I have updated that work, and we did have a working paper. I'm not sure if it was provided to the Board or not, but I would encourage you to look at that working paper.

You'll see where the current status of that work is, and we are exploring different model types going forward, to actually include that in the assessment model. But for this process and for this assessment, we're kind of handcuffed by what we were allowed and what we weren't allowed to change.

One of the things we aren't allowed to change is the model type. In order to incorporate that kind of information, we need to switch to the different model. It's on the forefront of what we're working on, and what we're working towards. But until we have a research track or until another publication comes out with a new assessment model, we're not going to be able to include that assessment model to provide management advice.

MR. McMANUS: Thank you, and just to follow up, is there plans for a research track assessment for Southern New England winter flounder?

MR. WOOD: It's not currently on the schedule, and I can't speak to whether that will change or

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not. There was some blowback at the FSC meeting that this environmental model isn't being considered, since it does exist. But again, we're handcuffed by the process, and I don't know. I think the next possibility for winter flounder to be on the research track is 2026.

MR. McMANUS: Great, thank you.

CHAIR BORDEN: Megan Ware.

MS. MEGAN WARE: I have a question. I was looking at the meeting materials, the assessment overview that was provided. My sense is that stock biomass isn't great, and potentially at its lowest level. But I thought that catch productions were pretty high, and I was just wondering how that, I'm trying to grapple how those two things work together. I didn't know if that was a result of recruitment assumptions, or how those projections are so high.

MR. WOOD: It is a result of recruitment assumptions. While we moved away from using a stock recruit relationship in the projections, we still are using the entire time series, the entire time series of empirical recruitment, and the projections are basically pulling a median from those values, which is still well above the recruitments that are being realized.

But again, we're not only limited by what we can change through the assessment process, but I kind of wanted to stay away from making that many changes for a Level 3 assessment. I made a lot of changes as it was, so I didn't really want to change the recruitment standard that was going into the projections. The resulting change in the type of recruitment estimates going into the projections did bring down the SSB reference point quite a bit.

If we limit the recruitment stands at say the last 10, 15, or 20 years, it does bring down those projections quite a bit as well. Now, Paul can probably speak better to this, but I believe at

the recent SSC meeting they've done what they did in previous years, and used the three-year-average catch, as opposed to using the projections for management advice, further reason that you just brought up.

CHAIR BORDEN: Any other questions? No hands up. Tony, you raised the issue of the Bell paper. I just note, I guess this is a question for staff. In the minutes of the last meeting of the discussion. Doug Grout, myself and others talked about the Bell paper and the need to have the PDT review it. Could the staff comment, did that take place, or is there a work in progress?

MR. DUSTIN COLSON LEANING: Hi, this is Dustin, just chiming in here. A decision was made to discuss this at the NRCC level, so I'm wondering if Toni Kerns would like to comment on progress there.

MS. KERNS: I think this conversation will continue at NRCC. It was our understanding that the Bell et al paper would be worked into the assessment conversations that we had. The NRCC, I understand from Tony Woods perspective that they were going to provide (broken up) management track discuss this. I think that wasn't communicated well during the NRCC meeting, so we'll have to talk about this some more, and continue on the conversation, and we can bring it back up at the next Board meeting, David

CHAIR BORDEN: All right thanks, Toni. Any other questions?

MS. TINA L. BERGER: David.

CHAIR BORDEN: Yes?

MS. BERGER: Paul Nitschke asked to be recognized to speak to that point.

CHAIR BORDEN: Okay, go ahead.

These minutes are draft and subject to approval by the Winter Flounder Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the Winter Flounder Management Board Webinar
October 2020

MR. NITSCHKE: Yes, with the Bell paper. Like Tony said, it can be addressed through a research track, unless the rules have changed for the management track. Tony is working on that work, but until the rule is changed, it can't really be addressed to a management track. The other question about the projections.

Tony is correct, the SSC basically went with the average catch approach. The main reason is because this stock is still in a rebuilding plan, and it wasn't deemed appropriate to put the big increase in the catch advice, if it can't rebuild by the end date. Those projections like was said, are pretty high compared to recent catches, so there is some concern with that.

CHAIR BORDEN: Okay, thank you. Anyone else, comments? That is a piece of continuing work that we'll no doubt get a report on at the next meeting. Are there any other questions on either one of these reports, and if not, I have to move on?

ELECT VICE-CHAIR

No hands up, so next item of business is to Elect a Vice-Chair of the Committee. Do I have any nominations? Toni.

MS. KERNS: There is a nomination. David, I thought we had someone to make it.

MR. COLSON LEANING: Yes, David, I don't know if you recall. We discussed a potential candidate leading up to this meeting. Is it inappropriate for the Chair to provide the nomination?

MS. KERNS: Totally fine to do so.

CHAIR BORDEN: We would prefer to have somebody on the Board provide the nomination.

MS. KERNS: Mr. Chairman, Megan Ware has one.

CHAIR BORDEN: Megan.

MS. WARE: Thank you, Mr. Chair. A vision has come to me, and I will nominate Bill Hyatt as Vice-Chair.

CHAIR BORDEN: Okay, do we have a second?

MS. CHERI PATTERSON: Cheri Patterson seconds.

CHAIR BORDEN: Any comments on the motion? Any objections to the motion? **The motion stands approved as suggested.**

ADJOURNMENT

CHAIR BORDEN: Any other business to come before the Committee? If not, meeting stands adjourned, and I'll turn it back over to Toni.

(Whereupon the meeting adjourned at 11:51 a.m. on October 19, 2020.)

These minutes are draft and subject to approval by the Winter Flounder Management Board.
The Board will review the minutes during its next meeting.

Atlantic States Marine Fisheries Commission

Atlantic Menhaden Management Board

February 2, 2021

2:30 – 3:45 p.m.

Webinar

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

- | | |
|---|-----------|
| 1. Welcome/Call to Order (<i>S. Woodward</i>) | 2:30 p.m. |
| 2. Board Consent | 2:30 p.m. |
| • Approval of Agenda | |
| • Approval of Proceedings from October 2020 | |
| 3. Public Comment | 2:35 p.m. |
| 4. Review Recent Fishery Performance Relative to Commercial Allocations
(<i>K. Rootes-Murdy</i>) | 2:45 p.m. |
| 5. Other Business/Adjourn | 3:45 p.m. |

MEETING OVERVIEW

Atlantic Menhaden Management Board

Tuesday, February 2, 2021

1:45 – 3:00 p.m.

Webinar

Chair: Spud Woodward (GA) Assumed Chairmanship: 03/20	Technical Committee Chair: Josh Newhard (USFWS)	Law Enforcement Committee Representative: Robert Kersey (MD)
Vice Chair: Mel Bell (ME)	Advisory Panel Chair: Meghan Lapp (RI)	Previous Board Meeting: October 20, 2020
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (18 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from October 2020

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Review Recent Fishery Performance Relative to Commercial Allocations (2:00-3:00 p.m.)

Background

- Amendment 3 (2017), implemented in 2018, establishes that the Board will revisit quota allocations every three years following implementation.
- Recent landings relative to commercial allocations and quota transfers were compiled for the Board's consideration in revisiting the current allocations. **(Briefing Materials)**

Presentations

- Review Recent Fishery Performance Relative to Allocations by K. Rootes-Murdy

5. Other Business/Adjourn

Atlantic Menhaden

Activity level: High

Committee Overlap Score: High (SAS, ERP WG overlaps with American eel, striped bass, northern shrimp, Atlantic herring, horseshoe crab, weakfish)

Committee Task List

- TC, SAS, ERP WG – various taskings relating to management response to the 2019 benchmark stock assessments
- TC – April 1st: Annual compliance reports due

TC Members: Josh Newhard (USFWS, Chair), Corrin Flora (NC), Joey Ballenger (SC), Jason McNamee (RI), Lindsey Aubart (GA), Jeff Brust (NJ), Matt Cieri (ME), Ellen Cosby (PRFC), Micah Dean (MA), Kurt Gottschall (CT), Jesse Hornstein (NY), Rob Latour (VIMS), Chris Swanson (FL), Ray Mroch (NMFS), Amy Schueller (NMFS), Alexei Sharov (MD), Jeff Tinsman (DE), Kristen Anstead (ASMFC), Kirby Rootes-Murdy (ASMFC)

SAS Members: Amy Schueller (NMFS, SAS Chair), Matt Cieri (ME), Micah Dean (MA), Robert Latour (VIMS), Chris Swanson (FL), Ray Mroch (NMFS), Jason McNamee (RI), Alexei Sharov (MD), Jeff Brust (NJ) Kristen Anstead (ASMFC), Kirby Rootes-Murdy (ASMFC), Joey Ballenger (SC)

ERP WG Members: Jason Boucher (DE), Matt Cieri (ME, BERP Chair), Michael Celestino (NJ), David Chagaris (FL), Micah Dean (MA), Rob Latour (VIMS), Jason McNamee (RI), Amy Schueller (NFMS), Alexei Sharov (MD), Howard Townsend (NFMS), Jim Uphoff (MD), Kristen Anstead (ASMFC), Katie Drew (ASMFC), Sara Murray (ASMFC)

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
ATLANTIC MENHADEN MANAGEMENT BOARD**

**Webinar
October 20, 2020**

These minutes are draft and subject to approval by the Atlantic Menhaden Management Board.
The Board will review the minutes during its next meeting.

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1. **Move to approve agenda** by Consent (Page 1).
2. **Move to approve proceedings of August, 2020** by Consent (Page 1).
3. **Move to approve the Ecological Reference Points fecundity target and threshold, which correspond with the fishing mortality ERPs approved in August 2020, for the management of Atlantic menhaden. The ERP fecundity target and threshold are to be defined as the equilibrium fecundity that results when the Atlantic menhaden population is fished at the ERP F target and threshold respectively** (Page 3). Motion by Lynn Fegley; second by Malcolm Rhodes. Motion carried (Page 4).
4. **Main Motion**
Move to set the total allowable catch (TAC at 176,800 metric tons for 2021 and 187,400 metric tons for 2022 which are the levels associated with a 50 percent probability of exceeding the ERP fishing mortality target, respectively (Page14). Motion by Justin Davis; second by Jim Estes.
5. **Motion to Substitute**
Move to substitute to set a TAC of 194,400 metric tons for 2021 and 2022 (Page 18). Motion by Nichola Meserve; second by Megan Ware.

Motion to Amend: Move to amend the substitute motion to set a TAC of 194,400 metric tons for 2021 and 187,400 metric tons for 2022 (Page 22). Motion by Justin Davis; second by Jim Estes
Motion fails (Page 26).

Main Motion as Substituted: Move to set a TAC of 194,400 metric tons for 2021 and 2022.
Motion carried (Page 27).
6. **Motion to adjourn** by Consent (Page 28).

ATTENDANCE

Board Members

Megan Ware, ME, proxy for Pat Keliher (AA)	John Clark, DE (AA)
Sen. David Miramant, ME (LA)	Roy Miller, DE (GA)
Cheri Patterson, NH (AA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Ritchie White, NH (GA)	Lynn Fegley, MD, proxy for B. Anderson (AA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Russell Dize, MD (GA)
Nichola Meserve, MA, proxy for Dan McKiernan (AA)	Allison Colden, MD, proxy for Del. Stein (LA)
Raymond Kane, MA (GA)	Steve Bowman, VA (AA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Bryan Plumlee, VA (GA)
Conor McManus, RI, proxy for Jason McNamee (AA)	Sen. Monty Mason, VA (LA)
David Borden, RI (GA)	Chris Batsavage, NC, proxy for S. Murphey (AA)
Eric Reid, RI, proxy for Rep. Sosnowski (LA)	Jerry Mannen, NC (GA)
Justin Davis, CT (AA)	Bill Gorham, NC proxy for Rep. Steinberg (LA)
Rob LaFrance, CT, proxy for B. Hyatt (GA)	Mel Bell, SC, proxy for P. Maier (AA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)	Malcolm Rhodes, SC (GA)
Emerson Hasbrouck, NY (GA)	Doug Haymans, GA (AA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)	Spud Woodward, GA (GA)
Joe Cimino, NJ (AA)	Jim Estes, FL, proxy for J. McCawley (AA)
Tom Fote, NJ (GA)	Sen. Thad Altman, FL (LA)
Adam Nowalsky, NJ, proxy for Asm. Houghtaling (LA)	Marty Gary, PRFC
Kris Kuhn, PA, proxy for T. Schaeffer (AA)	Derek Orner, NMFS
Loren Lustig, PA (GA)	Sherry White, USFWS
G. Warren Elliott, PA (LA)	

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Corrin Flora, Technical Committee Chair	Jeff Kaelin, Advisory Panel Chair
Amy Schueller, Stock Assmnt. Subcommittee Chair	Rob Kersey, Law Enforcement Representative

Staff

Bob Beal	Jeff Kipp
Toni Kerns	Laura Leach
Kristen Anstead	Savannah Lewis
Max Appelman	Sarah Murray
Dustin Colson Leaning	Caitlin Starks
Katie Drew	Deke Tompkins
Maya Drzewicki	Geoff White
Chris Jacobs	

Guests

Karen Abrams, NOAA	Peter Benoit, Ofc. Sen. King	Delayne Brown, NH F&G
Steve Atkinson	Alan Bianchi, NC DENR	Jeff Brust, NJ DEP
Pat Augustine, Coram, NY	Deidre Boelke, NEFMC	Mike Celestino, NJ DEP
Jerald Ault, Univ Miami	Jason Boucher, DE DFW	Benson Chiles, Chiles Consulting
Doug Austen, Am. Fisheries Soc.	Rob Bourdon, MD DNR	Matt Cieri, ME DMR
Joey Ballenger, SC DNR	Dick Brame, CCA	Heather Corbett, NJ DEP

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Draft Proceedings of the Atlantic Menhaden Management Board
October 2020

Guests (Continued)

Nicole Lengyel Costa, RI DEM	Brett Hoffmeister, Assoc. Cape Cod	Rachel Pacella
Jeremy Cox, <i>Bay Journal</i>	Edward Houde, UMCES	Morgan Paris, NC DENR
B. Crockett, Advantus Strategies	Asm. Eric Houghtaling, NJ (LA)	Paul Piavis, MD DNR
Jessica Daher, NJ DEP	Adam Kenyon, VMRC	Nick Popoff, FL FWS
Pam D'Angelo	Aaron Kornbluth, Pew Trusts	Brandon Raguz, NOAA
Lorena de la Garza, NC DENR	Ben Landry, Ocean Fleet Svcs.	Jill Ramsey, VMRC
Monty Deihl, Ocean Fleet Svcs.	Wilson Laney	Dave Ress, <i>Daily Press</i>
Greg DiDomenico	Tom Little, Ofc. Asm. Houghtaling	Harry Rickabaugh, MD DNR
William Dunn	Carl LoBue, TNC	Mike Ruccio, NOAA
Paul Eidman, Tinton Falls, NJ	William Lucey, Save the Sound	Tim Sartwell, NOAA
AJ Erskine, Bevans Oyster Co	Mike Luisi, MD DNR	Brett Scholtes, Omega Protein
Jennifer Farmer, VMRC	Dee Lupton, NC DENR	Amy Schueller, NOAA
Catherine Fede, NYS DEC	Chip Lynch, NOAA	Tara Scott, NOAA
Cynthia Ferrio, NOAA	Don Lyons	Alexei Sharov, MD DNR
Tony Friedrich, SGA	Chip McLeod	David Sikorski, CCA
David Frulla, ME	Conor MacWilliams	Melissa Smith, ME DMR
Thomas Fuda	Shanna Madsen, VMRC	Somers Smott, VMRC
Jim Gilmore, NY (AA)	John Maniscalco, NYS DEC	Brandy Stargell, Ocean Harvest
Lacie Gaskins, Omega Protein	Patrice McCarron, Maine	Nick Sterrett, Omega Protein
Shaun Gehan, Gehan Law	Lobstermen	H. Takade-Heumacher, FL FWS
Lewis Gillingham, VMRC	Genine McClair, MD DNR	Beth Versak, MD DNR
Angela Giuliano, MD DNR	Kim McKown, NYS DEC	Meg Viviano, <i>Ches. Bay Magazine</i>
Walker Golder, Audubon Society	Steve Meyers	Mike Waine, ASA
Willy Goldsmith, SGA	Mike Millard, FL FWS	Anna Weinstein, Audubon Soc.
Zoe Goozner, Pew Trusts	Steve Minkinen, FL FWS	Kate Wilke, TNC
Kurt Gottschall, CT DMF	Chris Moore, CBF	Angel Willey, MD DNR
Zack Greenberg, Pew Trusts	Thomas Moreland	John P. Williams
Pam Lyons Gromen, Wild Oceans	Jerry Morgan	Charles Witek, W Babylon, NY
Robert Groskin	Brandon Muffley, MAFMC	Chris Wright, NOAA
Carol Hoffman, NYS DEC	Ken Neill	Daniel Zapf, NC DENR
Jon Hare, NOAA	Robert Newberry	Erik Zlokovitz, MD DNR
Marin Hawk, MSC	Josh Newhard, FL FWS	Rene Zobel, NH F & G
Peter Himchak, Cooke Aqua	George O'Donnell, MD DNR	
Taylor Hinson, Omega Protein	Gerry O'Neill, Cape SeaFoods	

These minutes are draft and subject to approval by the Atlantic Menhaden Management Board.
The Board will review the minutes during its next meeting.

The Atlantic Menhaden Management Board of the Atlantic States Marine Fisheries Commission convened via webinar; Tuesday, October 20, 2020, and was called to order at 9:00 a.m. by Chair A.G. "Spud" Woodward.

CALL TO ORDER

CHAIR A.G. "SPUD" WOODWARD: Good morning everybody. This is Spud Woodward, your Chair of the Atlantic Menhaden Management Board. Welcome to our Board meeting this morning. As has been happening most of this year, we're scattered from Maine to Florida, once again, not where we want to be necessarily, but grateful to have business done. We have three hours this morning to complete the items on our agenda.

APPROVAL OF AGENDA

CHAIR WOODWARD: You have a draft agenda before you for consideration. Are there any recommended additions or changes to the agenda as presented?

MS. TONI KERNS: You have Megan Ware.

CHAIR WOODWARD: Go ahead, Megan.

MS. MEGAN WARE: I just had one quick item under other business, if there is time.

CHAIR WOODWARD: Okay, we will take care of that. We'll add that for other business. Very good, are there any other changes, additions to the agenda? If so, raise your hand, if not then I will consider the agenda approved by consent.

APPROVAL OF PROCEEDINGS

CHAIR WOODWARD: You also have available in the briefing materials the approval of proceedings from our last meeting in August, 2020. Are there any additions, deletions, corrections to those minutes?

MS. KERNS: I see no hands.

consider those proceedings approved by consent.

PUBLIC COMMENT

CHAIR WOODWARD: This is the time that we will take public comment for items that are not on the agenda. Is there anyone in attendance who would like to make a comment? Any hands?

MS. KERNS: We have Don Lyons.

CHAIR WOODWARD: Okay, go ahead, Mr. Lyons. You've got three minutes.

MR. DON LYONS: Thank you very much for the opportunity to make a brief comment today. My name is Don Lyons, and I'm Director of Conservation and Science for the National Audubon Society. I lead research, monitoring, and conservation activities for Audubon's Seabird Institute, who's goals are to promote the understanding and protection of seabirds, and the ecosystems that they rely upon. Our work primarily in Maine, but also elsewhere, contributes data on seabird prey, forage fish, to inform fisheries management in the Gulf of Maine ecosystem and others along the Atlantic Coast. Audubon's over two million members care deeply about marine and coastal birds, and are dedicated to protection and recovery of these species. We applaud the Board's decision in August of the ERP framework that will allow the Board to use ecosystem-based management for this vital forage species, to protect its role coastwide.

Now it is time to properly implement the ERP when setting catch levels for menhaden. We submitted the letter, along with three other groups, in support of your action today, to adopt a total allowable catch of menhaden for 2021 and 2022 that is less than or equal to a 50 percent probability of exceeding the ERP target of F equal to 0.19, or a total allowable catch of 176,800 tons or less.

This TAC level would not significantly limit commercial catches, but would ensure that myriad coastal and marine predators, including striped bass, other large predatory fish, coastal birds, sea turtles, and marine mammals have sufficient access to this critical food

resource, which will benefit other coastal businesses as well.

In addition, the Board should consider a buffer to further reduce the TAC to more fully account for risks and uncertainties associated with the ERP model, and the menhaden stock assessment, plus the overfished condition of herring, striped bass, bluefish, and weakfish, among other species. Thank you very much for your efforts today to sustainably manage Atlantic menhaden, and for consideration of these remarks. Thank you very much.

MS. KERNS: Have you heard from Peter Himchak?

MR. PETER HIMCHAK: This is Peter, I wanted to comment later on the motion.

MS. KERNS: Thanks, Peter. Spud, I think we might have lost you; I'm not hearing you speak.

CHAIR WOODWARD: You muted me, somebody muted me.

MS. KERNS: Sometimes the system is muting people automatically. We don't know when it's happening, so we'll keep an eye on that.

CHAIR WOODWARD: Pete, I hear you. I'll afford an opportunity for some comments after we start deliberations on the TAC. But you know this public comment period is for items that are not on the agenda, so you'll have an opportunity later.

MR. HIMCHAK: I understand that.

CHAIR WOODWARD: Any other hands, Toni?

MS. KERNS: No other hands, but Peter, did you know your hand went back up? Okay, no others, Spud.

UPDATE ON FECUNDITY ESTIMATES ASSOCIATED WITH ECOLOGICAL REFERENCE POINTS AND SET 2021-2022 AND SET FISHERY SPECIFICATIONS

CHAIR WOODWARD: Seeing no more public comment, we will move on to Item Number 4. The way we're going to handle this is we're going to have a Technical Committee report from Corrin Flora, but we want to split it up. We're going to ask her for a report on the fecundity estimates part, and after that stop.

I'll go to Jeff for opportunity to provide perspective from the AP on the fecundity estimates, and then we'll discuss and deliberate on that. We need to take action on fecundity estimates targets. Then once that's taken care of, we will move on to the Total Allowable Catch presentation, and I'll go to Jeff after that for an AP report. Hopefully that makes sense to everybody. With that, Corrin, you're up.

TECHNICAL COMMITTEE REPORT

MS. CORRIN FLORA: Thank you to the Board for allowing me to speak today. My name is Corrin Flora, and I am the TC Chair. My presentation today will deliver some background on the process. Then I will review the fecundity reference points. As stated, I will pause there and allow the Board to discuss.

Then we will go over the Board TAC levels, and at that time we'll take questions on that part of the presentation. At the August Board meeting ecological reference points were approved. This adjusts the fecundity reference points outlined in Amendment 3. Also, at that meeting the Board tasked the TC to develop a range of TAC alternatives for the 2021-2022 season. In September the ERP Workgroup developed a memo for the Board on the revised fecundity reference points, and additionally the TC met twice to develop the TAC alternative passed by the Board.

The ERP fecundity target and threshold, decide the equilibrium fecundity that results from the population of fish at the ERP-F target and threshold, respectively, were calculated using the same methodology used to produce the single-species fecundity reference points in the past. As shown in this table, the 2017 estimates of fecundity were above both the ERP target and threshold, indicating the stock is not overfished. This

Draft Proceedings of the Atlantic Menhaden Management Board
October 2020

is the only slide I have on the reference points, so at this point we can discuss the service.

CHAIR WOODWARD: Thank you Corrin, it is a fairly straightforward analysis, so I'll open up the floor for questions for Corrin for our FEC reference points component of menhaden.

MS. KERNS: I don't see any hands raised, Spud. Oh, here we go, we have Emerson Hasbrouck, and then Lynn Fegley.

CHAIR WOODWARD: Okay, go ahead Emerson.

MR. EMERSON C. HASBROUCK: Thank you Corrin for your presentation. What are the current 2020 fecundity levels? Is that what is in that column on the single-species fecundity, or is it something different?

MS. FLORA: This is based on the terminal year of the assessment. It is the 2017 estimated fecundity.

CHAIR WOODWARD: Did that answer your question, Emerson?

MR. HASBROUCK: Yes, thank you.

CHAIR WOODWARD: Go ahead, Lynn.

MS. LYNN FEGLEY: I would be willing to make a motion if you're ready.

CHAIR WOODWARD: I tell you what, if you'll hold on just a second. Let me call on Jeff Kaelin. When the AP met recently, they talked about this, not in great length. I would like to give them an opportunity just to provide the AP perspective on this. Jeff, would you mind doing that for me?

MR. JEFF KAELIN: No, Mr. Chairman. Good morning to the Board. I'm speaking to you about 100 miles south of Long Branch, New Jersey. I'm very sorry that we're not all together at the Ocean Place Resort, and I look

forward to the opportunity for us all to get back together in person again.

I'll just make a brief introduction about our AP meeting at 5:00 p.m. on October 8. I will comment at this time just briefly on the ERP portion of the discussion. We had pretty good representation of the AP. A number of people, however, were not able to actually get on the call, so I provided them an opportunity to provide written comments.

Really what we've done in the past, and as long as I've been Chair, is give everybody a chance to offer their own individual comments, and try to have those reflected, or at least the sense of them in the memo. I think Max did a good job with that. On the ERP fecundity target and threshold discussion, Max reviewed what we've just seen.

There were some clarifying questions about better understanding the ERP assessment, and how the ecosystem reference points were calculated. That was similar to Emerson's question, I think, trying to compare the 2017 fecundity projection against how it has been calculated in the ERP model. There were no recommendations made by the AP, Mr. Chairman, and the remainder of our meeting focused on the TAC alternatives. That's all I have, thank you.

CHAIR WOODWARD: Thank you, Jeff, I appreciate that. Okay, Lynn, back to you.

MS. FEGLEY: I would move to approve the Ecological Reference Points fecundity target and threshold, which correspond with the fishing mortality ERPs approved in August 2020, for the management of Atlantic menhaden. The ERP fecundity target and threshold are to be defined as the equilibrium fecundity that results when the Atlantic menhaden population is fished at the ERP-F target and threshold respectively.

CHAIR WOODWARD: Thank you, Lynn. We have a motion; do we have a second?

MS. KERNS: Malcolm Rhodes.

CHAIR WOODWARD: All right, we have a second from Malcolm Rhodes. Okay, so we have a motion and we

Draft Proceedings of the Atlantic Menhaden Management Board
October 2020

have a second. You can see the motion. Is there any discussion on the motion?

MS. KERNS: No hands are raised.

CHAIR WOODWARD: Any opposition to the motion, if so, please raise your hand.

MS. KERNS: I don't see any hands raised.

CHAIR WOODWARD: Motion on the Total Allowable Catch projections.

MR. MAX APPELMAN: Sorry, Spud, you broke up a little bit there.

CHAIR WOODWARD: Let's go ahead and move on to the Total Allowable Catch part of the presentation.

MS. KERNS: Spud, I'm not sure if Maya heard you say, just so you know Maya, **it was motion carried without objection.**

MS. FLORA: Okay Maya, whenever you are ready next slide, and we will continue, thank you. With the ERPs established we moved to the TAC specifications. As a reminder, in the past the Board has set annual or multiyear TACs based on best available science. With the established ERPs the projections were run using the BAM, since this model is better at short-term projections.

Based on the ERP difference in the BAM from the last time the Board reviewed projections in 2017, there was also an update on how recruitment is projected. The terminal year of data for these projections is still 2017, as that is the terminal year of the assessment. We are projecting out a few years now at this point.

As discussed at your previous meeting, under the single-species reference points the Board suffered acceptable risk to a lower probability. Now that the Board has established ecological reference points, you may consider a level of risk is acceptable, which is higher or lower than

when we were using the single-species reference points.

The TC undertook the analysis of Board task for projections. These were to provide the TAC that have a 25 to 60 percent probability of exceeding the ERP fishing mortality rate, or F target in 5 percent increments using 2021 and 2022 combined, and separate by years, and the percent risk of exceeding the ERP F target and threshold if the current TAC was changed, by negative 10 percent to positive 10 percent, also in 5 percent increments.

This includes a 0 percent change, or the current TAC. As referenced, here is Table 1 from your memo. Again, 2017 is the terminal year of the assessment. In 2017, F was below both the ERP target and threshold at 0.16. However, the TAC was lower in 2017, and landings were below the TAC.

To adjust the first Board TAC to provide TACS that have a 25 to 60 percent probability of exceeding the ERP target. In 5 percent increments using 2021 to 2022 combined, and as separate years, a TAC was then calculated for the projections using 2021 and 2022 or separately. Table 2 in the memo is presented here. There were two approaches for combining the year that the TC discussed. One approach was to provide the average value of the risk at the probability level. However, there was not one unique solution with respect to the average. There were confirmed by the TC that this would result in confusion.

The second approach was to provide the TAC that does not exceed the level of risk for either year, or the lower of the two TACs provided in the Table 2. Therefore, the TAC for 2021-2022 combined would be the TAC of 2021, when the years were calculated separately. Associated TACs for combined years ranged from 148,000 metric tons at 25 percent probability to 197,200 metric tons at 60 percent probability.

To address the second Board task, percent risk of exceeding the ERP target and threshold under the current TAC and levels above and below this TAC, the TC calculated percent risk in both years. Increasing the current TAC has a 0.5 percent chance of exceeding

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the ERP threshold. As for the ERP target, risk ranges from 52.5 percent risk with a 10 percent reduction from the current TAC, to a 70.5 percent risk of exceeding the target with a 10 percent increase in the TAC.

To inform the Board further, the TC has provided in the memo figures displaying the fecundity, recruit, full F fishing mortality rate and landings for projections done with a current TAC of 215,000 metric tons, a 10 percent increase, 25 percent risk of exceeding the ERP target, and 60 percent chance of exceeding the ERP target.

This slide represents the current TAC. The blue lines indicate the ERP threshold. The orange lines indicate the ERP target. The dashed black line is the 50th percentile or the medium. The dotted black lines are the 25th and 75th percentile. The solid black lines are the 5th and 95th percentile. Another way to visualize fishing mortality is with a density plot of F by year. The density plot in 2021 illustrates a 50 percent risk probability with the current TAC.

The dotted vertical line represents the F mean. The dashed vertical line is the F target, and the solid line is the F threshold. F has the highest chance of being close to the target, and a lower chance of being at the extreme values. The same analysis was run for 2022. Peaks in density are similar in F for years from 2021 to 2022, just at a higher magnitude. With that I can take questions from the Board for any clarification.

CHAIR WOODWARD: I tell you what. If it's all right with you, Corrin, what I think I'll do is ask Jeff Kaelin to give his AP report, and then we'll do questions for both you and Jeff, if that sounds good.

MS. FLORA: That sounds good.

CHAIR WOODWARD: Okay, so Jeff, if you will go ahead and give the AP report for me please, sir.

ADVISORY PANEL REPORT

MR. KAELIN: We had 13 of 18 members present. There are one or two people who wanted to drop off, or who have dropped off, and I think Max knows who those folks are. What we did, as Chair I did not make any comments. I normally don't, I use the meeting to take comments from the other AP members. In this case, Mr. Chairman, we have 12 members of the AP, 7 making comments in support of the status quo TAC, and 5 that had other perspectives. If we have time, I think it would be useful for me to talk through these bullet points. I'll ask you that, Spud, as the Chair, whether I should take that time. Perhaps there will be the same arguments or discussion that the Board itself will have, but I can go through those quickly if you would like me to.

CHAIR WOODWARD: Yes, please do, Jeff, I think that would be good for the Board.

MR. KAELIN: Seven AP members spoke or submitted comments in favor of the status quo TAC. The rationale was as follows. Given the precautionary nature of previous TAC decisions, which resulted in an F below the interim or F target in recent years, a risk of 66 percent of exceeding the new ERP-F target will not adversely impact the role menhaden play in the environment.

It's overly precautionary to set the TAC for menhaden based on the risk of exceeding the ERP-F target. For example, the federal risk policy for setting an ABC is based on risk of exceeding the OFL, the overfishing limit, a value akin to the ERP-F threshold. Status quo has 0 chance of exceeding the F threshold in both years.

Since the striped bass population is overfished, there is less demand for menhaden right now, and it was explained previously that even setting the TAC to 0 for menhaden would not be enough to restore the striped bass population. Then, given the precautionary nature of the TAC in recent years, maintaining the TAC at current levels for the next two years is reasonable, and supportive of the environment and the fishery.

Then the TAC should remain status quo, particularly during this time of economic crisis, due to the COVID-

19 pandemic. Additionally, harvest in 2020 will be well below the TAC due to lost fishing opportunity, thus providing an additional buffer to the fishery. In other words, there were some fishermen that spoke about their inability to get a complete season out of this fishing year, due to the virus. Not in all cases, but it was brought up.

Then there were five AP members that spoke or submitted comments in favor of setting the TAC at a level associated with the 50 percent probability exceeding the ERP-F target in both years. The rationale included the statement that fishing at the ERP-F target is intended to maintain a forage base for striped bass and other predator species that support important commercial and recreational fisheries, 50 percent risk tolerance exceeding the F target is appropriate, and consistent with past decisions.

Then the Board should continue on the path of ecosystem-based management, and not revert back to single-species management approaches. These TAC values are guided by newer modeling and management approaches, which the Board committed to in August, with the adoption of the Ecosystem Reference Points.

Another comment was that its important the Board give the ERP models every opportunity to do what they are intended to do. Future decisions should be consistent with the ERPs that have been implemented. These decisions go beyond helping rebuilding the striped bass population. Anything less than a 50 percent probability relative to the target, is inappropriate. The value of other fisheries that depend on menhaden as forage must continue to be considered. Then yes, there is good abundance of menhaden right now.

That is the result of precautionary management actions. These new ERPs allow for continued success. Those were the specific comments on this portion of your meeting, Mr. Chairman. I think I'll close out thought by saying that one of the other issues that was on our agenda was

the election of a new AP Chair. I guess when you get to be my age, you get put out to pasture.

I will no longer be your Chair, but I will look forward to remaining on the AP. Meghan Lapp from Rhode Island was elected the new AP Chair, and she will assume the Chair position after this meeting this week. By the way, Meghan just became the Chair of the New England Herring Advisory Panel with Bert Jongerden retiring. I think Meghan will do a good job as the Chair, she is with Seafreeze in Rhode Island, many of you know her all ready.

I was pleased to pass the torch to Meghan, and then finally Mr. Chairman, there were a couple of AP members who talked about their on-the-water experiences in recent years, and commented that there have been more small fish and fewer larger, older fish in the catch, particularly in the northeast, this was inshore in the Gulf of Maine, I think.

Then the AP also did express some concern about the 6,000-pound incidental catch provision, and that participation and effort has really increased to concerning levels in recent years. The harvest under the provision does not count towards the TAC. The AP recommended that these issues be addressed in the next management measure that you move, that the Board would move ahead for Atlantic menhaden, Mr. Chairman. The AP adjourned the meeting at 6:45, and that ends my report. Thank you, I am happy to answer any questions.

CHAIR WOODWARD: Thank you, Jeff, I appreciate your report, and I appreciate your service to the Commission. I can just tell you, being put out to pasture is a relative term, because a lot of us thought we would return and be put out to pasture and we were not, so we look forward as you continue to participate on the AP. At this point I will open up for questions for both Corrin and Jeff.

Just raise your hand and we'll take them in the order in which the hands are raised. We also have the menhaden brain trust with us, both from the Commission and from NMFS, Beaufort Labs. If you've got questions that sort of harken back to the models and some of the other analyses, then we can certainly

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try to see who those are addressed to. With that, Toni.

MS. KERNS: You have Justin Davis, John McMurray, and Jim Estes.

CHAIR WOODWARD: Okay, go ahead Justin.

DR. JUSTIN DAVIS: I have a question for Corrin, and it goes back to those density plots of fishing mortality under the 216,000 metric ton TAC. I'm wondering if we could possibly, yes there they are. These are interesting. I've got two questions. One is, what is the explanation for sort of the bimodal kind of distribution here, and also if I'm interpreting these correctly. This suggested under a status quo TAC most model outcomes would suggest that we're going to end up with a fishing mortality rate that is above the target. I'm just wondering if that is a correct interpretation. Thanks.

MS. FLORA: Katie may be better at answering the bimodal portion of this.

DR. KATIE DREW: Sure, I can jump in there, and hand it back to you when we're done. But basically, so the way these projections are done is that we're taking output from our uncertainty runs the MCB runs, where we take different combinations of parameters, and to figure out sort of the uncertainty about where we are in the terminal year, and then project that forward with additional uncertainty about recruitment and things like that.

One of the things that we found when we did the initial set of uncertainty runs, kind of about the terminal year, is that there is some combinations of fecundity and natural mortality that result in a much larger population, and a lower F rate. That sort of represents that little peak to the left, where that same set of landings will give you a lower F rate. Then there is also a big chunk of those runs come out centered around that higher F rate and a lower biomass.

When you pull from that combination of runs, you get that same set of landings will give you a higher fishing mortality rate, which is that bump further to the right. It's related to some of the uncertainty in the model, about where we are in 2017, and how that gets folded into these projections. I think actually Amy Schuller is also on the line, so if she has anything that she would like to add to that answer, she would be a good choice as well.

MS. KERNS: Amy, if you raise your hand, I will be able to find you quickly, so I can unmute you, just in case you are not unmuted.

MS. AMY SCHULLER: Hi, Kristen already unmuted me. Yes, it's just a function of the uncertainty analysis, which is what Katie just described. A lot of these plots can have that kind of an appearance.

CHAIR WOODWARD: Okay, Corrin, anything to add to that?

MS. FLORA: Nothing else from me. That was much more concise than I would have been able to put it, so thank you very much, Katie.

CHAIR WOODWARD: Justin, any follow up on that?

DR. DAVIS: I'm good, Mr. Chair, thank you for those answers, those were great.

CHAIR WOODWARD: All right, John McMurray.

MR. JOHN G. McMURRAY: I have a question about the AP report, but I suppose it's for Corrin. It seems to be a common theme that no matter how much we reduce F on menhaden, it's not going to bring striped bass back, and of course that's true. It will take a significant reduction in F along with probably a few good JAls to get us where we need to be. But at the AP meeting the industry seems to be arguing that the striped bass population is reduced to such an extent right now that we don't need all that menhaden. Now, my understanding is that striped bass was used for its sensitivity to the model, and it is not necessarily the only species affected. In other words, if there is enough striped bass at target SSB, then there would likely, if there is enough for striped bass to target SSB.

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Then there would likely be enough for everything else, bluefish, weakfish, dogfish. In other words, it's being used as an indicator species. Is that correct? I mean it's not simply that we don't need all this menhaden in the water, because striped bass are depleted. That is my question. I have a follow up too, depending on what the answer is.

MS. FLORA: Yes, the ERP target and threshold are both based on the ability to reach the maximum F of menhaden that sustains the striped bass at their biomass target. This is when striped bass are fished at their F target. We are using the striped bass target of biomass in the menhaden target and threshold.

MR. McMURRAY: Okay, I understand that. I guess what I was asking is that it's not really just based on, I mean stripe bass was picked because other species would theoretically do well if there was enough menhaden for striped bass at target SSB. Is that correct?

MS. FLORA: For the most part, yes. The striped bass, it was the most consistent model and yes, the assumption is that if we sustain the striped bass the other fisheries will also be sustained.

MR. McMURRAY: Okay, thank you. Going back to striped bass, a theme on the other side is that the continued intensive fishing on menhaden does reduce the probability of a striped bass recovery. It's common in the comments to reference that menhaden fishing at its current level actually reduces the striped bass stock by 30 percent.

Can you clarify that, and what specifically are they referring to when they mention that 30 percent number? I would also like to ask about the viability of maintaining a menhaden population a level high enough to provide for that continued availability as the stock rebuilds.

DR. DREW: This is Katie, I can maybe jump in on some of the ERP questions. The 30 percent comment I don't think is one that I've heard

before. The idea is that if you, we said originally that if you don't reduce fishing mortality on striped bass, there is no level of menhaden harvest, including a moratorium, that would bring striped bass back to the target.

That obviously doesn't mean that striped bass would not benefit from less fishing mortality on striped bass under that scenario, but changing F on menhaden isn't sufficient to bring F back to their target. However, when it's combined with a reduction in F on the striped bass side, then fishing menhaden does have an impact on the striped bass recovery trajectory.

If you consistently fish menhaden above the ERP-F target, then you're going to jeopardize the recovery of striped bass to their target, even if you bring striped bass F down to their target, down to the striped bass F target. You need kind of that combination of fishing menhaden at the ERP target, and fishing striped bass at the F target to bring stripe bass back up to their biomass target. If one of those Fs is significantly off, then it's going to affect the trajectory of that recovery. I think people were talking, one of the things that came up maybe was this idea that right now striped bass has taken a cut on the fishing mortality side. We put in new regulations to bring F down to the target.

Starting in 2020, although it looks like declines in catch in 2018 and '19, have also benefited the stock. But that if we kind of continue where we're at the F target for striped bass, then at the end of our rebuilding plan we'll have a 41 percent chance of being at or above the SSB target. I'm not sure if that is where that number came from, but I don't know if this is helpful, or if this helped answer your question, or if there is anything you want to clarify about your question.

MR. McMURRAY: Actually, no that was very helpful, thank you, Katie.

CHAIR WOODWARD: Thank you, John, Jim Estes.

MS. KERNS: Spud, you also have Adam Nowalsky had his hand up next.

CHAIR WOODWARD: All right, I'll call on him after Jim.

MR. JIM ESTES: Good morning, Mr. Chairman. Corrin, thank you for the memo and the explanation, in fact I think I almost got it. If you wouldn't mind going back to Table 2, I have a couple questions about that, if you don't mind. My question is, it appears to be as you go from TAC for 2021 to TAC for 2022 underneath each scenario, there is an increase, and so I have two questions about that. Why does it increase? Secondly, could we expect a similar trend for the third year?

MS. FLORA: When you do the years individually, the reason the second year has an increase is due to recruitment. In theory, without the additional years of landings, if we kept projecting forward, there is a possibility that the third year would also increase. But all of that is based on the model and the recruitment from year to year.

MR. ESTES: Okay thank you. That is what I expected, thank you.

CHAIR WOODWARD: Adam Nowalsky.

MR. ADAM NOWALSKY: This is a good slide to be on here, but I'll refer back to what I believe was the first bullet point in the first slide that talked about our task here today to set annual specifications for 2021-2022 specifications. The question I have is, does annual mean something different for 2021 and 2022? Are we looking to set a single number for 2021 and 22, or do we have the option before us today to set a single annual number just for 2021, and then revisit that for 2022? Once I get an answer to that I would like to have a follow up question.

CHAIR WOODWARD: Yes, we have the option as a Board to set.

MS. KERNS: Spud, you're cutting out. We can't hear you right now.

CHAIR WOODWARD: I think it is our intent to set it for two years. We can set it for one year. I'll remind everybody, if we do not make a

decision about 2021 and 2022, then the current TAC would carry forward. Max, Toni, anything we need to clarify on that? Did I get it right?

MS. KERNS: Spud, you cut out in the middle of your beginning. I think probably what you said, and just to make sure Adam has an answer is that you can set it for multiple years or not, it's the Board's choice. As you just said, you thought it was the intention to set it for two years. But Adam, if you only set it for one year you don't have to revisit for the second year, you would just set the second year later on. If you set it for two years, you can always revisit what you have set. If you revisit and want to make a change, then it would be two-thirds majority vote to change it.

MR. NOWALSKY: Okay great, so basically there are five options on the table. Do nothing, which means we roll over with status quo measures. Next option is set the TAC for one year for 2021, which would require us to take this process up again same time next year. Next option is to set a TAC that would be the same for 2021 and 2022. Fourth option is to set a TAC that would be different in 2021 and 2022, and then the last option would be to set some number, either the same or different for 2021/2022, but revisit it for 2022 with a two-thirds majority.

If we went the route of just one year, setting only 2021, is there anything from a technical nature that could be brought forth? We know that a lot of work went into this ERP work. It's an ongoing task. Is there anything that would come forward to us that would better inform us for 2022, if we only took action for 2021 today?

MS. FLORA: The additional data that we would have would be the actual landings for 2020 that we would be able to put into projections. Beyond that I don't think that there is any other data or analysis that would be available at that time.

CHAIR WOODWARD: Thank you, Corrin. Toni, anymore hands raised for questions?

MS. KERNS: I don't see any hands currently.

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CHAIR WOODWARD: Okay, any questions? It's your last opportunity.

DR. DREW: Toni, I see several hands up, actually.

MS. KERNS: Allison Colden had her hand up, then Ritchie White, and somebody else just had their hand up and then they put it down.

MS. TINA L. BERGER: Toni, you have a bunch more.

MS. KERNS: We have John Clark and Conor, Nichola and Dennis, and then Justin Davis.

CHAIR WOODWARD: We had Allison, Ritchie, John Clark, who else?

MS. KERNS: Conor, Nichola, Dennis, and Justin.

CHAIR WOODWARD: Okay, we'll start with Allison, go ahead.

DR. ALLISON COLDEN: I just wanted to get some feedback from the Technical folks, so about one of the comments from Jeff Kaelin's AP report, and I want to make sure I'm understanding this correctly. I think Jeff reported from those who are in support of status quo that the F is below the ERP-F target, and I think that that is referring to the 2017 terminal year F.

My understanding of that is that the terminal year F was under a lower TAC, and also a TAC, or a harvest level that was lower than some of those that we're considering today. I was curious if the technical folks could sort of walk us through that and explain where the 2017 harvest levels and TAC were that got us to that F that was realized in 2017.

MS. FLORA: This is Corrin, so Allison, you are correct that in 2017 the TAC was lower, and the associated landings were also lower. Those are associated with that F, which is under the target and the threshold. Is there more to the

question than that? I know that gets the first part of your question.

MS. COLDEN: Yes, that pretty much covers it. I was hoping we would have those numbers on hand, but if you don't have them at the ready, then that will suffice, thank you.

MR. APPELMAN: There is a table in the report, Allison, we showed in this presentation. Maya, if you could go back one slide. I think this shows what you're asking for pretty well. The 2017, that is the terminal year from the assessment, and that 0.16, which is below the ERP-F target and F threshold, represents the harvest level that occurred in 2017, which is in that last column, 173,000 metric tons, which in turn was below the TAC of 200,00 metric tons.

We've been hearing a lot about a TAC of 216,000 metric tons. That has been the TAC since 2018. That is the number that is everyone's mind, so I think this is a good reminder that that terminal year estimate 0.16 reflects the landings that occurred in 2017, which was also under a lower TAC.

MS. COLDEN: Thanks, Max, that is what I was looking for, I appreciate it.

CHAIR WOODWARD: Ritchie White.

MR. G. RITCHIE WHITE: I have a question for whoever is able to answer. I would like to know, are there any species that the Commission manages that we maintain a population at or above the target?

MR. APPELMAN: I can jump in. Just with my experience with striped bass, I mean that's a good example of a management program that also manages towards the target, both the fishing mortality and biomass targets. I'm sure there are other examples, but that is the one I'm most familiar with.

MR. WHITE: Follow up, Mr. Chair.

CHAIR WOODWARD: Yes, go ahead, Ritchie.

MR. WHITE: I was trying to get at what we're doing here today would be to keep a population at or above

the target, and I'm wondering if we have any species we manage, where we accomplished that. Are there species? I know we attempt to reach the target on all our species that have target and thresholds, but are there any species that we actually accomplish maintaining a population at target or above?

DR. DREW: Spiny dogfish is actually currently above their biomass target. As just one example, that actually is in this model already.

MS. KERNS: Black sea bass is also above its target.

MR. WHITE: Thank you, that's helpful.

MS. KERNS: Cobia is as well, maybe?

CHAIR WOODWARD: Thank you, Ritchie, all right, John Clark you're next.

MR. JOHN CLARK: Thank you for the presentations they were very informative. My question is for Jeff Kaelin about the AP, and I'm glad this slide is up here, because it shows that the landings have been below the TAC for the past three years. Jeff, it wasn't clear from the report what the economic impacts of reducing the TAC would be at this point.

Obviously, menhaden is a critical bait for so many other commercial fisheries like blue crab, and now increasingly for lobster. The members of the AP, did any of them express concerns about being able to meet the demand for other fisheries, and what impact this might have on the economics, because we really don't see much about the economics at all in what we've been looking at here?

MR. KAELIN: Well, unfortunately, you know I spent a lot of time at the Councils too. You know we see a lot more economic evaluation at the Councils than we typically do at the Commission. I think that the people who were in favor of status quo perspective is that the stock is in very good condition right now.

Getting back to John McMurray's questions about striped bass, in relationship to where we are today.

With striped bass not being rebuilt until 2029, I think we feel the stock is in very good condition. All I know, I'm also on the New Jersey Council, I'm not representing the New Jersey Marine Fisheries Council right now, but I am the Chairman of that committee, and we had an AP meeting the other night.

I know here in New Jersey in round numbers, we were at 80 million in 2011, we were down in the 40 million range after 2012. The Commission has allowed us to get 20 percent back since then. Over the last eight years we've gotten back to about 50 million. At a ten-cent fish that's a five-million-dollar fishery, so here in New Jersey, and I appreciate the opportunity to answer your question, John. A 20 percent cut is a million-dollar loss to fishermen in this state, and most of their small-scale fishermen in the bait market. You're right about the extent of that market, it is significant. It's an opportunity, frankly, to sell more menhaden into the lobster fishery, now that herring is down. By the way, those striped bass estimates, I think there were like four stomachs that had herring in them, so I'm not sure we need a herring buffer here.

I know I'm the Chair, I'm not supposed to editorialize, but it's a lot of money. It's millions of dollars coastwide to not realize the catches that we have now, and have had in the last three years. You can see last year for 2019, it was darn close to the TAC, and in a range that most management bodies would look at it as success.

Frankly, I think my last personal comment is, we should be declaring success with this fishery, frankly. It's difficult, looking at the science, looking at the BAM projections and what you have in front of us with these extremely conservative ERP projections that we could all be declaring victory here and saying, you know what we're already there.

I think we would like to minimize the potential to lose a million dollars in the menhaden fishery this next two years. The last thing I'll say is, you know to Adam's point about setting a TAC for this year, and then taking

a look at what happened next year. You would have another year of 216,000 to look at.

Determine what percentage of that TAC was taken, and create new projection to give you a sense of security about your risk tolerance today, rather than taking a hit over a couple of year period that's generated. Thank you for the opportunity to speak, I know that's not traditionally what I'm allowed to do, but that's my swan song, so thanks for the question, John, it's a good question.

CHAIR WOODWARD: Any follow up to that?

MR. CLARK: I'm good, thanks, Mr. Chair.

CHAIR WOODWARD: Conor McManus is next.

MR. CONOR McMANUS: My first question is for Corrin, and I just wanted to clarify this for the edification of the Board. When we look at Table 2 and 3 within the TC memo, obviously the range of TACs within the overlap in a course of different uncertainty, as well as the probability of exceeding the target ERP.

I just wanted to confirm that as we look at those values, we should, particularly from 2021 to 2022, we should consider those analyses mutually exclusive, because they have different risk associated with them, correct, so we shouldn't be thinking about how a TAC in year 2022 of a scenario in Table 3 relates to a scenario in Table 2 that is associated with probability of exceeding the ERPs, correct?

MS. FLORA: You are correct that these should be mutually exclusive, that you shouldn't compare between the two tables.

MR. McMANUS: Great, and my second question is more perhaps maybe for Toni or the Commission. But you know as we think about, and just a follow up to Adam's comment earlier. When we think about years 2021 and 2022, a one vs two-year TAC setting. I'm just curious as to how those timelines may interact, if some of

the risk and uncertainty policies that the Commission is also working on, and perhaps timelines at which those tools would be available in the context of our discussions for today.

MS. KERNS: That is a great question, Conor. I believe we're very close to the risk and uncertainty policy being almost complete. I haven't got an update from Jason or Sarah recently on where exactly they are to finalizing. I would need to go to them to be able to give you a better idea of when it would be available. I think there is a possibility it would be available to you next year. Sarah, would that be misspoken?

MS. SARAH MURRAY: No, Toni, that is correct. We're closing in on the finish line, I think, and should have that available, hopefully for the winter meeting.

MR. McMANUS: Great, thanks, I just want folks to consider that. That seems to be a tool that would really aid us in this effort, thanks.

CHAIR WOODWARD: Nichola.

MS. NICHOLA MESERVE: Thank you, Mr. Chairman. I just wanted to come back to the 2020 landings. There was a comment in the Advisory Panel report about lost fishing opportunity in 2020, and an assumption that we would come in below the TAC again this year. (cut out)

MS. KERNS: Nichola, you are cutting out, almost like you have frozen. Hey Nichola, do you think you could try to type your question?

MS. MESERVE: Assumption is that staff has not put any type of preliminary landings data together that would be able to inform us otherwise.

MR. APPELMAN: This is Max. Nichola, you definitely cut out for a good chunk of your question. I think I might be able to piece together what you were asking for. The answer is no. We don't have landings data for 2020 right now, at least we don't have complete landings data. Aside from the number of transfers that have been coming in, we really don't have an indication of which states have utilized or caught their quota this year, 2020.

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CHAIRMAN WOODWARD: Any follow up to that, Nichola?

MS. MESERVE: No, thank you.

CHAIRMAN WOODWARD: Dennis Abbott.

MR. DENNIS ABBOTT: We've heard a lot of things this morning. I would like to make a few comments, and then ask a question at the end of my comments. Adam talked about setting specifications for one year, possibly two years, then we would have data from this year. But it would be my opinion that the data from this year, I think Nichola just eluded to that that it might not be very useful, because of earlier comments that COVID had affected fishing habits, so on and so forth. Secondly, I think that we've found, in my opinion in the past, that setting one-year specifications just finds us back doing what we're doing this morning over and over again, and we're better when we do specifications for multiple years, as we've done in herring, shrimp, and other things I'm sure.

Not a proponent of setting specifications every year, unless there is mitigating circumstances. The Board, as the Chair said earlier, we do have that opportunity at any time to take Board action. Earlier too, John McMurray talked about relationships with striped bass, and as he said it's like an indicator species. There are so many other factors, or so many other things that we considered when we went to ERPs.

That being said, we do have to consider you know, the whales and the birds. Another thing that I find up here in the corner of New England is that when there is a robust population of menhaden, we're more apt to see menhaden. When we see more menhaden in our waters, we see more striped bass.

A good indicator of that was 2019, where we had menhaden right in close to the coast for a good part of the summer, and the striped bass fishery was excellent. Not so much this year. All that being said, a final comment would be

that too bad that Jeff is going out to pasture, but I'm sure we've not seen the last of him, and we always appreciated having him provide input, and his AP report today was excellent.

But again, he had comments 7 on one side, 5 on the other. If we knew who the participants were, you know we would know what they were going to say, just by knowing who they are and who they represented. That's always the case with the APs. My question would be, this would probably be directed to Katie Drew. What are the implications if we exceed the target for menhaden, in the long term looking out to 2030? What are the implications for striped bass if we're exceeding the target on menhaden?

DR. DREW: I think, you know in the short term, the next couple of years, if there is too much uncertainty in the models to really be able to tell you what's the effect of say going over in 2021 versus 2022? But in the long term, if we consistently fish above the F target, then the ERP model suggests that we won't be able to get striped bass back to their biomass target, even if we are fishing striped bass at their F target.

CHAIR WOODWARD: Thank you, Katie, and thank you Dennis for the comments and the questions. Okay, I have Justin Davis.

DR. DAVIS: I had raised my hand earlier, because it seemed like we were sort of unexpectedly winding down discussion and comments quickly, based on the number of hands that were up, and thought we might be ready for a motion to help focus discussion. It seemed like there were more hands up than we thought at that point. I'll just put it out there that I am prepared to make a motion to help further the discussion, but I'll leave it up to your discretion if we're at that point now, or if we want to take some more questions and comments.

CHAIR WOODWARD: Toni, do we have more hands?

MS. KERNS: I just want to confirm. Allison, your hand is still up, and John McMurray's hand is still up, and I don't know if they had put them down and then raised them back up again.

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MR. McMURRAY: Yes, I put my hand back up.

CHAIR WOODWARD: Your hand is back up, John?

MR. McMURRAY: Yes, it is.

CHAIR WOODWARD: Okay well, go ahead.

MR. McMURRAY: Okay, so Jeff brought up the herring buffer, and I'm curious if there was any discussion on that, either at the AP meeting or otherwise, even at the staff level. I know it was a recommendation at some point, but then it seems to have disappeared from all of this.

CHAIR WOODWARD: Corrin, Katie.

DR. DREW: I would say that we had put that out there as sort of a source of scientific uncertainty that the Board might want to consider when they think about how comfortable they are with their levels of risk for this fishery. But we don't have any further quantitative guidance to give the Board on that topic. Maybe if Jeff Kaelin wanted to expand on that I think he could, from the AP perspective.

MR. KAELIN: Yes, thank you, Katie. I did look into this issue. I know that the model that we're going to use projects a significant demand on herring by striped bass on a seasonal basis. For that reason, you know that interaction hasn't been modeled specifically, or at least not peer reviewed, if I remember correctly.

I went to Jon Deroba, and I asked him about the data that was available to make this, create this link between the two species, the demand for herring by striped bass. This is what he said to me. He said from 1985 to 2014, the average number of striped bass stomachs sampled in the spring and fall bottom trawl surveys was 41. The number of striped bass stomachs that actually contained an Atlantic herring averaged 3.

The take home is that the bottom trawl surveys don't sample many striper stomachs at all, and very few actually contain herring. I did not use that information at your AP meeting, but I did at the New Jersey AP meeting, because I wanted to go right to the source, and that is what Jon Deroba, who is the Herring Assessment Biologist at the Fisheries Science Center said to me about this relationship, so that is the only data that I have.

DR. DREW: Just to add to that. You know the Northeast Fisheries Science Center food habits database was not the only source of data that we were using on food habits for striped bass, or for the other species. We do have some other sources of data that included striped bass and the herring relationship. But it's true that the ERP model is kind of sensitive to the levels of herring, which is why we're recommending that sort of status quo intermediate level of herring as part of the reference point calculations, as opposed to the threshold, the below threshold levels of Atlantic herring, when we're actually calculating the reference points.

CHAIR WOODWARD: Any follow up on that, John?

MR. McMURRAY: No, not right now, thank you.

CHAIR WOODWARD: Any other hands, Toni?

MS. KERNS: I'm giving it a pause just to make sure there is none. You just have Justin Davis.

CHAIR WOODWARD: All right, Justin, go ahead.

DR. DAVIS: At this point I would like to make a motion, and I think staff has that motion, so if we could get that up on the screen that would be great.

CHAIR WOODWARD: If you would, please read it.

DR. DAVIS: I move to set the total allowable catch at 176,800 metric tons for 2021 and 187,400 metric tons for 2022 which are the levels associated with a 50 percent probability of exceeding the ERP fishing mortality target, respectively. If I get a second, I would be happy to speak to the motion.

CHAIR WOODWARD: Thank you, we have a motion for consideration, do I have a second?

MS. KERNS: Jim Estes.

CHAIR WOODWARD: We have a second from Jim Estes from Florida. All right, Justin, as maker of the motion, I'm going to allow you to make some comments.

DR. DAVIS: I think we're faced with a pretty significant and precedent setting decision today, but in my mind, I view it as a pretty straightforward decision. I was really proud to be a member of this Commission when we took the vote at the last meeting to adopt the ERP framework for managing menhaden.

It's been a constant backdrop of my, you know about 20-year career now in fisheries management, this discussion about the need for ecosystem-based management, and also sort of the challenges and the frustrations in implementing it. I think it was a really big moment when this Commission took the vote to implement ERPs at the last meeting.

I think it's really telling that we heard sort of an outpouring of support, and positive thoughts about that decision from a wide spectrum of the public across multiple stakeholder groups. To me there is a lot of challenges in implementing ecosystem management. One is developing kind of the scientific machinery or infrastructure to provide the scientific advice you need to do it. You know we were fortunate that we had some really talented people working for a number of years to develop the science to allow this move. There is also kind of the administrative challenge of making the jump to ecosystem management, in the face of the uncertainty of what that means for your current management framework. We had to sit in discussions about that at previous meetings at the Policy Board about, what does this mean for the Commission to make this move?

There is uncertainty how it will play out in the future, but we took that brave step of doing it anyways. I think one of the, kind of, sneakier aspects of what's difficult about ecosystem management is that it really makes you make clear value judgments about what you want out of an ecosystem, and then using those value judgments to inform how you make decisions on tradeoffs.

One of the problems with single-species management is that we get stuck in this sort of fallacy of thinking we can have our cake and eat it too, by looking at species in a vacuum. We try to manage them for high abundance, manage everything for high abundance, manage all fisheries for high output.

What ecosystem management makes us do is recognize we can't possibly do all those things at once, that we're going to have to make some tradeoffs. When we adopted this ERP framework, I think what this Board was saying was that we were going to value and prioritize menhaden as a forage fish.

That we would make decisions about menhaden management with that in mind, and that we would take a precautionary approach to menhaden management in the future, giving its value to all the other species that we're managing, and that we would look at tradeoffs through that lens. You know given that, and given that today we're making a pretty precedent setting decision, because this is the first time, we're really implementing this new approach.

I think it's important that we take a risk averse approach. To me, a 50 percent probability isn't really even risk averse necessarily. It's this default probability we use quite a bit, and it's because it's right in the middle. It is really neither risk averse nor risky, it's sort of splitting the difference. You know we use this 50 percent probability all the time when we're making decisions.

For me that's why I feel it's appropriate here. You know we are working on a more robust risk and uncertainty approach that Conor McManus mentioned earlier. We saw a great presentation on that at a previous meeting. Hopefully we'll be able to use that in the near future, but for right now, without

that I think this 50 percent probability is really an appropriate approach.

For sure there is uncertainty here about this decision. We talked earlier today about some of the uncertainties in the model with biomass, natural mortality and recruitment. There is uncertainty about future states of other species that are part of this ERP framework, uncertainty about fishery performance. There is also the fact that the menhaden stock is in a very robust state.

All of these things, I could see how these would lend towards an idea, well maybe we can hedge here a little bit, and sort of try not to take as much of a cut on the fishery side. To me those arguments are not very persuasive. I don't think it's in line with what the majority of the public and our stakeholders want. They want to see us take a precautionary approach to menhaden management. You know at a previous meeting we discussed, this came up again today, the idea of the herring buffer, that there are sources of uncertainty here that indicate we should maybe be more precautionary than 50 percent. Also, looking at the menhaden stock by itself, and saying it is really robust, we're nowhere near the F threshold.

To me that is not persuasive, because that is backsliding into that single-species mindset of just looking at menhaden in a vacuum. For all those reasons, I would really like to see this Board make a decision today to adopt these TACs that represent the 50 percent probability. I think to me this is sort of us making final delivery on the promise that was encapsulated in this ERP approach we have adopted, so I am hopeful that the Board will support this motion.

CHAIR WOODWARD: Thank you, Justin, I appreciate that, very well said. We have a motion, so I want to open up the floor for some discussion on this motion, so Toni, what have you got for hands?

MS. KERNS: You have Allison Colden and Nichola Meserve.

CHAIR WOODWARD: Go ahead, Allison.

DR. COLDEN: I think the maker of the motion did a great job sort of laying this out. There are a couple points that I would like to emphasize here. With respect to the adoption of ERPs, you know this is a long time coming, and something that this Board had committed to, and we finally took that step in August.

But this decision is really the first opportunity that we have to walk the walk of ERPs, and I think it's important to demonstrate to all those who supported the adoption of ERPs that the Board is committed to not only adopting that framework, but making sure that it's implemented in a way that it exceeds its intended goals.

Even talking about the broad swath of individuals that supported the adoption of ERPs. Even the industry supported the adoption of ERPs, and indicated their willingness to work with the Board in the implementation of ERPs. I hope that is the case moving forward, no matter what our decision is here today. But you know industry did indicate their support for the adoption of ERPs, and I think that we have that support behind us when we're making these decisions.

One important point I think Katie Drew has also made clear through our questions and discussion this morning is that we need to be achieving this menhaden F target, if we are going to be effectively implementing ERPs. We talked about the fact that striped bass is simply an indicator species for the full suite of animals and organisms that are in the ecosystem model, and that the Striped Bass Board has already taken actions to try and deal with striped bass, and bring striped bass to its F target.

But if we are not doing our due diligence on our end as a Menhaden Board, to make sure that we're achieving fishing mortality rate at the menhaden ERP target, then we're not going to achieve rebuilding of striped bass. (breaking up) at some point earlier about economic impacts. There are economic impacts

on both ends. If we don't achieve rebuilding of striped bass, there could be huge economic impacts throughout the entirety of the coast, considering what an important fishery it is among a lot of states.

I just wanted to lend my support for this motion, reiterate Justin's points too that really a 50 percent probability comes down to a coin flip, and maybe we should be shooting for more than that. But I think that this should be our primary consideration, as we move through this discussion that we really need to focus on implementing a TAC that will achieve the ERP goals and objectives that we adopted at the last meeting. Thanks, Justin.

CHAIR WOODWARD: Thank you, Allison, okay, Nichola.

MS. MESERVE: I wanted to support a large amount of what Dr. Davis and Colden just said. I do agree that 50 percent probability is the appropriate probability to be setting the TAC to manage this fishery using the ERPs that were unanimously supported by the Board, and it's important that we act in a way that upholds that decision and meets the expectations that we would actually implement the ERPs in a credible manner.

But I do think the Board could use a bit of discretion into how we achieve that that could balance the ecosystem objective with the fishery objectives, just in a minor way that fazes in attaining that 50 percent probability over two years. Unfortunately, the projections that we have present two options to achieve that 50 percent probability, one which is part of the motion, which would cause I believe undue instability in the fishery, by causing an 18 percent reduction, only to be followed by a 6 percent increase.

The other option, if we set it constant at the lower level for two years would forego that increase in quota in 2022. I wish we had asked the TC, no fault of their own, hind sight is 20/20 that we didn't ask for this, would be a TAC that

achieved the 50 percent probability by the second year, and that way phases it in.

That type of approach would still achieve our end goal in just two years, but provide more stability, as I said, for the menhaden fishery and the secondary users. Lacking that particular analysis, there is one projection in the TCs memo for the 10 percent quota decrease to 194,400 metric tons, which results in a 52.5 percent probability of exceeding the ERP target in 2022.

When you consider that the projections for 2020 include the TAC for 2020, 2021, and '22, and then being taken in full, which as we discussed is inconsistent with the recent fishery performance, due to some inherent inefficiencies in a state-by-state quota allocation system. It is very possible that the actual probability would be at 50 percent for 2022. I would, if you would entertain it now, Mr. Chairman, like to make a motion to substitute this.

CHAIR WOODWARD: Just hold that for a minute, and let me make sure that we don't have any more discussions on this primary motion. Toni, are there any hands raised, waiting to be called on?

MS. KERNS: Robert LaFrance just put his hand up just now, so I don't know if that is in response to what Nichola is talking about, or earlier.

CHAIR WOODWARD: All right, Rob, go ahead.

MR. ROBERT LAFRANCE: I guess I wanted to make certain that I was on the record as supporting Dr. Davis's motion for the many reasons that he talked about. I just wanted to sort of reiterate the point of view that this is a first time ERP evaluation that the Board is working on. I think it's really important that we do it the way it should be set out, looking to that 50 percent probability, as opposed to something less than that.

I guess I just wanted to strongly support Dr. Davis's motion, and make certain that people understand that. This has kind of been really significant for a lot of reasons, in terms of the Board's action, and to be at the 50 percent, based upon what we've seen thus far, I think makes a lot of sense, and I think it's, as Dr. Davis mentioned, scientifically defensible, as well as

something that I think many of the folks who are watching this deliberation this morning would like to see us do, so thank you for the time, sir.

CHAIR WOODWARD: Thank you, Rob, appreciate it. Are there any other hands up?

MS. KERNS: I don't believe so. Allison, your hand is still up, if you wanted it to be up. All right, she took it down, so she didn't really mean for it to be up, so there are no other hands that are currently up.

CHAIR WOODWARD: All right, so Nichola, back to you, and I'll certainly entertain a motion.

MS. MESERVE: Okay, thank you, Mr. Chairman. On the basis of producing landings that would result in no more than a 50 percent probability of exceeding the ERP-F target by 2020, I would like to move to substitute to set a total allowable catch of 194,400 metric tons for 2021, and 2022.

CHAIR WOODWARD: Okay, we have a motion, do we have a second?

MS. KERNS: Megan Ware.

CHAIR WOODWARD: We have a motion by Nichola Meserve, and a second by Megan Ware. Okay, so I'll open up the floor for comments, questions and discussion on the substitute motion.

MS. KERNS: We have Megan Ware, Maureen Davidson, Jon McMurray, Steve Bowman, and Nichola, your hand is still up. I didn't know if you wanted to speak to your motion or not. Your hand is down, so not Nichola.

CHAIR WOODWARD: Megan, go ahead.

MS. WARE: Good morning everyone. Kind of reading through the public comments we've received, I think there are two things that the public is watching for in the Board's decision

today, and the first is kind of our signal on our level of risk with the F target. Then the second is a commitment to implementing ERPs. I thought Nichola's motion that I seconded addresses both of the points. I think this option is trying to find balance here, and takes measurable steps towards getting towards that 50 percent risk target in two years.

I also believe that as we are taking those significant and positive steps to the 50 percent target, this option is affirming that the Board is committed to implementing ERPs. I don't believe that this is setting a precedent for the Board moving away from that 50 percent target, but rather this is a critical step in our implementation of ERPs, which are new to all of us.

There are a couple things which some people have mentioned that make me comfortable with the motion to substitute. The first is that the projections do assume that full with 2020 TAC is harvested. To date we have not harvested a full menhaden TAC, so I think there is a bit of a buffer with that assumption. Then I'll also note, as others have mentioned, that I really wish we had our risk and uncertainty policy to kind of guide us in this decision.

But I do believe that stock status is something that can inform, kind of the window of risk that the Board feels is acceptable. Given the strong status of the menhaden stock, I am comfortable taking the two years to get towards that 50 percent target, knowing that this option is resulting in a significant reduction in the TAC and landings, which will further promote a healthy menhaden stock. I'm going to support the motion to substitute.

CHAIR WOODWARD: Maureen Davidson.

MS. MAUREEN DAVIDSON: Both Nichola and Megan, I agree with their reasons for moving to substitute the motion. I say that we definitely should continue to move towards achieving our ERPs and our ERP targets. But I think if we do it gradually, sort of in a stepwise motion, we will be able to bring all of our stakeholders along with us as we move forward.

I am uncomfortable with us taking a very large step in the beginning, which can adversely affect many of the

users of the menhaden resource. We can still move forward, we can eventually get to our 50 percent probability, but let's do it in a more gradual stepwise motion, so that we do not strongly affect some of our users.

CHAIR WOODWARD: John McMurray.

MR. McMURRAY: Nichola, can you clarify the probabilities of exceeding F in the first and second year with this TAC. Then I have a follow up comment.

MS. MESERVE: May I, Mr. Chair?

CHAIR WOODWARD: Yes, go ahead, Nichola.

MS. MESERVE: Looking at Table 3 in the memo from the TC. This is the analysis that represented the 10 percent quota reduction, and it results in a 58.5 percent probability of exceeding the ERP target in 2021, and a 52.5 percent in 2022, based on the landings in 2020, 2021, and 2022 achieving the full TAC.

MR. McMURRAY: Okay, thank you. I'm sorry I missed that in the material. I want to be okay with this, because I don't think it's unreasonable. But I'm having a difficult time doing that, because the way the general public will see this is that we agreed unanimously to adopt ERPs in August with the support of scientists, academics, anglers, conservationists, pretty much everyone.

But while the Board said it would manage menhaden for their role in the **(breaking up)**. When it comes down to actually having to make a decision to constrain landings, one that will have at least a 50 percent chance of achieving that intent, well than no, we're not going to do that. We're going to take a gradual approach, and we'll continue managing menhaden as if it were just another industrial commodity.

It's the same old perception that the public has had about this management body since for as long as I can remember. We don't make

difficult decisions that might impact industry, even when the science is clear that we should, and we capitulate to special interest. Frankly, it's hard to argue that that perception is incorrect.

A 50 percent probability of success should be the bare minimum, given all the uncertainties here, particularly given the recent status of striped bass, bluefish, weakfish, herring, and not in spite of their status. The model only includes a handful of species that depend on menhaden, it doesn't account for things like whales, which are probably the biggest consumer of menhaden in the ocean.

Really, we should probably be considering a buffer. I think anything over 50 percent would be inconsistent with the ERP objectives, and the public will certainly look at it as such. I think we need to do the right thing here, not just for menhaden and striped bass, whales, but also for the integrity of the Commission, so I don't support the motion.

CHAIR WOODWARD: All right, Steve Bowman.

MR. STEVEN G. BOWMAN: In all due respect to my colleague, Mr. McMurray, I am not going to strongly disagree, but I am going to disagree on a certain number of issues. When the tables came out and I started looking at them, Virginia has over the past several years demonstrated a very, very conservative approach to the managing of menhaden.

We don't have to rehash what the Commonwealth of Virginia has done, what we've asked for, and different things that we've done that have been supported by this Commission, and we are greatly appreciative for that. However, after taking the time to talk with my colleagues on the Commission, and also with the stakeholders that I also am responsible for representing.

I believe that this motion is a good one. One of my colleagues made the comment that, you know, and I think Ms. Davidson kind of alluded to it that the ERPs should have an opportunity to work. We should have a chance to take a look and see how things are going, but at the same time they should not be punitive in nature. One can argue whether they are punitive, and

whether that equates to kicking the can down the road. I don't believe so. I believe that the 10 percent number is an appropriate number to give us an opportunity for the two-year period of time, which in response to the question that Mr. McMurray made. We're at 52.5 percent in the second year, which approaches very closely to the 50 percent.

While we're looking at numbers and looking at different variations, we also have to consider the people that are involved in this as well. Whether you call them special interest, I call them just as much a part of the matrix, the bait industry, the reduction industry. We need to consider that in the grand scheme of the decision-making process, and that is the reason I am going to support the motion. I believe this is a good motion.

I did find it interesting that from the AP report, and I'll finish with this that the AP report and the AP meeting was not unlike the Fishery Management Advisory Committee meetings that we have in Virginia. There are those that are on one end of the spectrum, there are those on the other end of the spectrum, and nobody seems to be in the middle. Sometimes the middle road is the place to go, and for that Mr. Chairman, that is the reason I support the motion. I thank you for your time.

CHAIR WOODWARD: Thank you Steve, Toni, any other hands?

MS. KERNS: We have Conor McManus, Lynn Fegley, Joe Cimino, Allison Colden, and Roy Miller.

CHAIR WOODWARD: All right, go ahead, Conor.

MR. McMANUS: Unfortunately, I won't be able to support this motion for a couple reasons. One being with the suite of reasons that Dr. Davis has described in the original motion. I think as we move into the ERP framework, we are looking to try and inform our management

practices with the best science available, and I think somewhat ignoring the Table 2.

I'm looking at actual percentage of probability of exceeding the ERP target, and relying on changes in TAC by 10 percent, in and of itself does not behoove us towards that effort. Also, in the context of the risk uncertainty policy framework, I think ultimately, we've been discussing 50 percent, but ideally come 2022 that percentage or probability of exceeding the ERP target will be identified or defined by that policy framework, which we would then move to that.

I think in the absence of that now, the 50 percent allows us to continue towards this effort of making science-informed management decisions. But ideally in a future year, we wouldn't necessarily be kind of burning into a 50 percent probability, we would be guided by this new tool.

CHAIR WOODWARD: Lynn.

MS. LYNN FEGLEY: You know, I just wanted to speak in support of this motion. I think this is a very measured and deliberative way for this Board to move into the realm of ERPs. This is a groundbreaking piece of management. It's new, we haven't done it before, and I think it is our responsibility to make sure that we're not punitive as we move forward, that we walk the path rather than jump off the cliff. I'll just say from a point of history. It was in the fall of 2011 when this Board adopted the first reference point for menhaden at F-30 percent target. I just will say that adopting a target of F-30 percent for this fishery, that is not a particularly conservative level.

But that was a step from what was essentially an unmanaged fishery. We actually set those reference points, and the controversy that surrounded that was enormous. I just want to take a moment to say that in nine years since 2011, we have moved from a fishery that was running with some spatial and temporal restrictions to this.

I don't think anybody, anybody, anybody, not our stakeholders on all sides should undersell the value of what we've done, and the direction that we are moving. I am so proud of our science and our scientists, and I really do think that when we're talking

about the difference between a 50 percent probability and a 52.5 percent probability in year two of exceeding the target, and a 0 percent chance of exceeding the threshold. I think that puts us on a very solid ground to take this forward.

CHAIR WOODWARD: I appreciate those comments. Sometimes it's easy to get caught up in the now, and forget where we've been. But we continue to strive to accomplish this. With that, Joe Cimino.

MR. JOE CIMINO: I'm going to speak in favor of the substitute. You know Justin Davis started this off and I found myself as usual agreeing with him, that this is highly complex modeling and you know something new for us to some extent. Then he kind of mentioned that the 50 percent probability is old hat, something we've done plenty of times.

But the 50 percent probability here plays into this modeling, and all the assumptions that are taking place, including recruitment and assumptions that landings are going to be at the TAC or similar to past landings. We're looking at something different. It's very clear that folks around the table, and in the general public, have a hard time understanding what 50 percent probability means. We hear this coin-flip example thrown out there.

The TC did a great job with the density plots, trying to show that it's a lot more complex than that, and we're talking about a certain number of model runs that fall within the certain bounds, right? In my opinion, and Katie Drew hinted at the fact that the uncertainty in the next two years on all those playing in, kind of changes where we're going.

We know long term we need to be conservative. Luckily, we're able to set a TAC every year. We know we can readjust in the future if we need to. You know to me I look at some of the other things in this model. We heard in both February and August that the

reliance on Atlantic herring seems a bit unrealistic.

Sensitivity runs that they did kind of only look at that spatially and temporally are more realistic, more in line as Dr. Cieri said with the diet data. But they don't have that peer review yet to kind of add that to this equation. In that case, to me that gives us that buffer for Atlantic herring. I think that as we see the 2020 landings, as we get a better understanding for where we are, and hopefully get a risk policy that helps guide us here in making decisions in 2022. We will see that this substitute motion was getting us exactly where we needed to be.

CHAIR WOODWARD: Allison.

DR. COLDEN: I just want to make one specific comment. Those who are supporting the substitute motion have provided a lot of information in support of their position. But there is one very specific thing that I would like to respond to, because I think it could set a precedent, which at least for me personally makes me a little bit uncomfortable, and that is, you know in making this decision.

Making the assumption that the 2020 landings will continue to underperform the TAC. Based on the information that we're seeing, what we've heard from the AP about the struggles related to the Corona Virus pandemic, that may very well be the case. But I just find it difficult, and in an uncomfortable situation for the Board to allow that assumption to weigh in our calculus.

When we are looking at different risk probabilities associated with the decision we're making now, I just wanted to go on the record, making the point that we do not currently have any preliminary or final information on the 2020 landings. The risk associated with however far that may be under realized in 2020, personally I don't think should weigh in to the calculus here.

CHAIR WOODWARD: Roy Miller.

MR. ROY W. MILLER: I just wanted to weigh in in support of the substitute motion for a number of reasons, two of which I'll highlight. One, there were

no economic considerations factored into the decision making for the original motion nor the substitute motion directly. I favor the substitute motion, because it does at least give some consideration to the economic consequences of reducing the quota.

For that I find the substitute motion favorable. The actual value of 194,400 metric tons for 2021 and 2022 is within the range of what the industry has achieved over the past three years. I appreciate the eloquent arguments that were offered by the makers of the motion, and some of the responders of the original motion, and also, I appreciate the comments of Lynn Fegley for the substitute, and therefore, I think the substitute is a reasonable way to go at this point in time.

CHAIR WOODWARD: Thank you, Roy. All right, Toni, anybody else in the queue?

MS. KERNS: Yes, we have Thad Altman, Justin Davis. Conor, I don't think you put your hand down, and then Eric Reid, and I was correct on Conor.

CHAIR WOODWARD: Thad, go ahead.

REPRESENTATIVE THAD ALTMAN: I just want to say a few things. One, I'm against the substitute motion, it undoes the original motion that is a concept and an action that is extremely well thought out. It's based on good science, was an extremely well-crafted motion, and it's a measured approach. I think that is the direction we need to take, and therefore I'm against the substitute motion.

CHAIR WOODWARD: Justin.

DR. DAVIS: At this time, if it's appropriate, I would like to move to amend the substitute motion.

CHAIR WOODWARD: Okay, go ahead.

DR. DAVIS: I would like to amend the substitute motion to read, move to substitute to set a TAC of 194,400 metric tons for 2021 and 187,400 metric tons for 2022.

CHAIR WOODWARD: All right, we have a motion to amend the substitute for consideration, let me finish getting this up there.

MS. MAYA DRZEWICKI: Can you just repeat those values, please?

DR. DAVIS: Sure, so essentially the value for 2021 would stay the same at 194,400 metric tons, but the value for 2022 would be 187,400 metric tons.

CHAIR WOODWARD: Okay, so we have a motion to amend the substitute, do we have a second?

MS. KERNS: Eric Reid, are you seconding that or are you just wanting to speak?

MR. ERIC REID: I am not seconding it; I would like to speak.

MS. KERNS: I just wanted to confirm. You have Jim Estes.

CHAIR WOODWARD: Do we have a second?

MS. KERNS: Jim Estes.

CHAIR WOODWARD: Jim Estes seconded it. All right, so we have a motion to amend the substitute before the Board now. I will go ahead and go to you, Eric, and then for those who wish to speak to the motion to amend, raise your hand and we will get you in the queue. Go ahead, Eric.

MR. REID: Actually, as far as the amendment for the substitute, I'm not really sure what the difference is, because my guess is, we're going to be revisiting before 2022 anyway. But my point goes to Mr. Miller's point as well. What does concern me is the science that is lacking in this is the economic science, the socioeconomic science, which is a science.

Mr. Kaelin referenced an ex-vessel price of ten cents in his report, and at 94,400 tons that is 4.7 million dollars in ex-vessel revenue, and if you use an average or a modest economic multiplier, it's usually 3.1, which puts the value of that fishery, the loss at \$14,758,000.00 in one year, and you take it over two years and it's pretty close to 30 million dollars. That does concern me. I supported ERPs when we voted on them, absolutely I support them. But I think the substitute, not amended, the substitute, is a step in the right direction.

It's not a giant step, I agree with that, but it is a step towards fully utilizing ERPs, and if we take it a little bit at a time, at least we'll have the direction will be the right direction, so we can at least analyze the effects of it over a little bit longer time.

CHAIR WOODWARD: All right, so I would like to invite those who want to speak to the motion to amend the substitute to weigh in now.

MS. KERNS: You have Justin Davis and Joe Cimino.

CHAIR WOODWARD: Okay, go ahead, Justin.

DR. DAVIS: I'll try to provide a little bit of rationale here for this amendment. I'm receptive to the arguments that are being made around the table about concerns about the original motion. I'm reading those concerns to be concerns about the large reduction in the TAC that the original motion proposes to move to next year, and also a sort of desire to make a more gradual move towards getting to this 50 percent probability, essentially not trying to get there in one step next year, but trying to get there over two years.

My concern about the substitute motion is that probability of exceeding F target in the first year, 58.5 percent. I just feel that is too high, it's not in keeping with what I think the vast majority of the public wants to see us do here. What I'm kind of proposing here is I'm trying to

sort of split the difference, with the idea that if we have a TAC of 194,400 metric tons for 2021 that represents much less substantial drop in the TAC next year.

I think if you look at the table of TAC versus landings, this TAC of 194,400 metric ton represents, you know if the entire TAC is caught, not a substantial deviation from what landings have been in recent years. Then by setting it at 187,400 tons in 2022, we will essentially end up at the same point where we would have ended up with the original motion of getting to a level in 2022 that is associated with the 50 percent probability.

I understand that it is a little bit apples and oranges here, and that 187,400 metric tons was predicted to get us to the 50 percent probability under that scenario of setting different TACs in 2021 and 2022, but I think ultimately what this does is sends the signal to the public that we're committed to getting to that 50 percent probability, which is appropriately precautionary TAC. We'll do it in two years, we'll try to have less of a jump down for the fishery next year. That's my rationale for making this amendment.

CHAIR WOODWARD: Thank you, Justin, all right, Joe Cimino.

MR. CIMINO: I think I'm actually going to direct this maybe to Toni as a procedural question, instead of trying to put any of the staff who have developed these tables on the spot here. Toni, you had mentioned for setting 2022, and this is kind of an on-the-fly motion. If we were to approve this amended substitute, would it then take a two-thirds majority if we found that the math really didn't work, to come back and revisit this later? That is my question, thank you.

MS. KERNS: Correct, if you approve this motion then you would need to do two-thirds majority to change it later on.

CHAIR WOODWARD: Any other hands to speak to the motion to amend?

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MS. KERNS: I don't see any other hands, but there was a member of the public in the comments that said they wanted to comment at some point on the TAC motion.

CHAIR WOODWARD: All right, so we have three motions here that we've got to dispense with. In the interest of just letting us ponder on this a little bit, I will open it up for some limited public comment. If you're a member of the public and you wish to comment, raise your hand, and please try to keep the comments focused on the TAC related motions and limit them to three minutes. What do we have, Toni?

MS. KERNS: I know Peter Himchak had asked first.

CHAIR WOODWARD: All right, Pete go ahead.

MR. HIMCHAK: Yes, this entire exercise is about risk and uncertainty. My AP comments were along the line of what the federal councils are dealing with, with OFLs and not targets. The menhaden resource has been managed so precautionarily since 2013, that when an ERP model came up with reference points, we were already under it.

The NWACS MICE model is supposed to be used for illustrative purposes. To that end, I mean be careful about risks that may be unintended. The probability of restoring striped bass is 41 percent of reaching the target biomass in 2029. Leaving so many menhaden in the water, bluefish are closer to their SSB threshold, and striped bass needs a couple good recruitment years. We all recognize that.

But also recognize that the NWACS MICE model could also show, will, has also shown that bluefish moving ahead and being restored, could be to the detriment of striped bass by predation of bluefish on striped bass recruits. Again, tradeoffs are necessary in all this risk and uncertainty. Omega Protein still supports the status quo TAC for the next two years.

CHAIR WOODWARD: Thank you, Pete, anybody else, Toni?

MS. KERNS: Jeff Kaelin.

MR. KAELIN: Thank you, Mr. Chairman, and members of the Board. I pretend that I'm at the table now at the other end of the room, not sitting as the Chair. I just simply wanted to say that I really appreciate Ms. Meserve's and Ms. Ware's motion, and the support for that motion that I've heard from several people around the table who I have a lot of respect for. Not that I don't have a lot of respect for those who support the underlying motion. I don't mean to say that. We've all been at this for a long time, and I really appreciate the spirit of, not the amended substitute, but the substitute motion. I would hope that the Board could find a way to get to that today. You know we do also think the 216 is not going to cause any issues in a negative sense, but I think the optics is important too, so for that reason I just wanted to speak in strong support of the motion to substitute by Nichola and Megan. Thank you, Mr. Chairman.

CHAIR WOODWARD: Anybody else, Toni?

MS. KERNS: I don't see any other members of the public with their hands raised.

CHAIR WOODWARD: Very good, we've had some robust discussion, and we've got to work our way back up to our main motion, so how about we take five minutes to caucus, and when we return from caucusing, we will call the vote on the motion to amend and dispense with it, and (garbled). I've got 11:04, so we'll be back for a vote at 11:09.

(Whereupon a five-minute caucus was held.)

CHAIR WOODWARD: Okay, I have 11:09. If anybody feels they need a little more time for caucusing, if you'll raise your hand right now.

MS. KERNS: Emerson Hasbrouck put his hand up, as did Chris Batsavage and Justin Davis has his hand up.

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CHAIR WOODWARD: Is that for a little more time? Is that what you're asking for?

DR. DAVIS: I actually just wanted to ask Toni if we're going to follow the procedure, we've kind of been following at these meetings with reading off the states that vote different ways, because you know, we're not around the table and can't see each other, so it's sometimes helpful to see which states voted which way.

MS. KERNS: Yes, I will read the states as they vote in favor or against, and then also do a check to make sure that your hand has been raised. If you don't hear me call your state or jurisdiction then it means I didn't have a hand for you.

CHAIR WOODWARD: Emerson, Chris, questions?

MR. CHRIS BATSAVAGE: No, I'm good, and we're done caucusing. Thank you, Mr. Chair.

CHAIR WOODWARD: Emerson, how about you?

MR. HASBROUCK: Yes, we still need a couple of more minutes here, thank you.

CHAIR WOODWARD: All right, let's just, I'll tell you what, in the interest of giving everybody plenty of time, let's take another five minutes, so 11:15.

(Whereupon the caucus was extended five more minutes)

CHAIR WOODWARD: Okay, if I can call us back to order after caucusing. Toni, if you will go over that voting procedure one more time, just to make sure everybody is clear on it.

MS. KERNS: You'll ask for those in favor, and one member from each state will raise their hand. We typically ask the Administrative Commissioners, unless the state has worked out somebody else. I will read the name of each state that has their hand up, and then staff will

put all the hands down once we have all those states, and then you'll ask for those again, the same thing will happen, null votes or abstentions.

CHAIR WOODWARD: I'm going to assume that everybody has completed their caucusing, is ready to vote. With that I'll turn it over to you, Toni, to call the vote.

MS. KERNS: Looking for those in favor, please raise your hand. Then give it a second to let those hands get up. I have Connecticut, South Carolina, Pennsylvania, North Carolina, Florida, and Georgia. Put those hands down. Jim Estes, you just put your hand up, okay thank you, Jim. Those against.

I have New York, New Jersey, Fish and Wildlife Service, NOAA Fisheries, Delaware, Maine, Rhode Island, Virginia, Massachusetts, New Hampshire, Maryland, and PRFC. I'm going to put the hands down. Those null votes, I do not see any hands raised for nulls. Abstentions, I do not see any hands raised for abstentions. Max, can you give the count, please?

MR. APPELMAN: Yes, let me tally it up, one second. I have 5 in favor, 13 opposed.

CHAIR WOODWARD: I thought we had 6 in favor, it was Connecticut, South Carolina, Pennsylvania, North Carolina, Florida and Georgia, is that right?

MR. APPELMAN: I do not have Florida in favor, so if Florida could correct that.

MR. ESTES: Yes, we were in favor, this is Jim.

MR. APPELMAN: That would be 6 in favor, 12 opposed.

CHAIR WOODWARD: Okay, motion to amend fails, so now we are back to the move to substitute, there has been fairly robust discussion on this motion. Does anybody feel a strong urge to add anything else to the discussion on this motion? If so, raise your hand.

MS. KERNS: No hands.

These minutes are draft and subject to approval by the Atlantic Menhaden Management Board.
The Board will review the minutes during its next meeting.

CHAIR WOODWARD: Okay, then we will call the question on this motion, so Toni, I'll turn it over to you.

MS. KERNS: Is there a need for caucus, Spud?

CHAIR WOODWARD: I don't think so. I think we've had ample time to caucus, unless somebody feels otherwise. If so, raise your hand very quickly or move on.

MS. KERNS: All right, I don't see any hands raised for that. All those in favor, please raise your hand. I have New York, New Jersey, U.S. Fish and Wildlife Service, NOAA Fisheries, Delaware, South Carolina, Maine, Virginia, Massachusetts, New Hampshire, Maryland, and PRFC. I will put the hands down for the group.

All those against the motion. I have Connecticut, Rhode Island, Pennsylvania, North Carolina, Florida, and Georgia. I will put the hands down. Are there any null votes? I see no hands. Are there any abstentions? I see no hands. Max, just to confirm, I have 12 in favor and 6 against. Let me know if you get that same count.

MR. APPELMAN: Yes, that is the same count I have, 12 in favor, 6 opposed.

MS. KERNS: No nulls and no abstentions.

CHAIR WOODWARD: Okay, motion to substitute carries and now becomes the main motion.

MS. KERNS: Spud, if you'll just give Maya a moment to make a new main motion, so folks know what they're voting on, and Maya, I think you can do a new slide if you wanted to. Spud, I think maybe for the record, if you could read this motion as the main motion.

CHAIR WOODWARD: I will. Do we need to add any language in there about associated probabilities, or just it's fine the way it is? Is the way it was made.

MS. KERNS: I think it's on the record, and just Maya, there is no maker or seconder, it is the property of the Board at this point, I believe. If you are satisfied that it is in the record, Spud, and the Board is satisfied, then I don't think you need to add it.

CHAIR WOODWARD: I'm fine, I think we'll have plenty of documentation in the transfer of this to what the intent was here. We have a motion before the Board. Move to set a total allowable catch of 194,400 metric tons for 2021 and 2022. Do we need to add in TAC for Atlantic menhaden, or is it good the way it is?

MS. KERNS: I think it's fine. We know that this is the Menhaden Board, and you guys can't set any other species TAC.

CHAIR WOODWARD: Any need to caucus on this? I wouldn't think so, I think we've pretty much covered it. If so, raise your hand quickly if you feel the need to caucus.

MS. KERNS: I see no hands.

CHAIR WOODWARD: Okay, let's call the vote.

MS. KERNS: John Clark just put his hand up.

CHAIR WOODWARD: All right, go ahead, John.

MR. CLARK: No, I'm sorry, I thought you were calling the vote, I'm sorry, I'm just voting yes.

MS. KERNS: All right, I will call that vote. Just to note for Maya, if you could put in here that this is final action, so it is a roll call vote, but because I say the name of every state, it ends up being a roll call anyway. All those in favor, please raise your hand. I have New York, New Jersey, U.S. Fish and Wildlife Service, NOAA Fisheries, South Carolina, Maine, Pennsylvania, Virginia, Massachusetts, New Hampshire, Maryland, and PRFC. If I didn't call your state, please let me know if you had your hand raised. I'm going to put the hands down.

MR. APPELMAN: Sorry to interject, Toni, I thought I heard Delaware was voting yes, but I didn't hear that state called off.

MS. KERNS: I believe you're correct, but John, I didn't call your state, I apologize.

MR. CLARK: That's all right, we're a yes.

MS. KERNS: Okay, thank you, John. Eric Reid, your microphone is open, just so you know. Those against the motion. I have Connecticut, Rhode Island, North Carolina, Florida, and Georgia. I'm going to put the hands down. Any null votes? There are no null votes, any abstentions? No abstentions. Max, did you have 13, 5, 0, 0?

MR. APPELMAN: That is correct, 13 in favor, 5 opposed.

MS. KERNS: Maya, if you could please write roll call next to that. Thank you.

CHAIR WOODWARD: All right, thank you, Toni, and thanks everyone. We have made that decision. I appreciate the lively discussion; I think there were a lot of good points made. We have obviously entered a new era in fisheries management, and I'll kind of rephrase this to.

It's one thing to stand at the alter and say, I do, it's a whole other thing to make the marriage work. We're going to make this marriage work, and in any good marriage there has to be some compromise. We're moving in that direction. With that, we've come to other business, and I will call on Megan.

MS. WARE: This should be really quick. I did want to note that Amendment 3 has a provision which requires the Board to revisit allocation every three years, and time flies, and 2020 is the third year under Amendment 3. I think we've met this trigger. I'm not hoping to have this conversation today, but I'm wondering if this is something that could be added to the winter meeting agenda, just so we can start that conversation.

CHAIR WOODWARD: Yes, we've been talking about next year, looking ahead with the mandates, to do a fishery review. We will not have complete information for 2020 until April. We can certainly convene a meeting in February, and talk about how we want to approach the allocation review, what data sources we would ask to be reviewed and collated, as well as what other issues are a concern about menhaden management that we need to be discussing. It doesn't necessarily need to be a long meeting, but just a heads up that we'll have the discussion, but we probably really won't have any detailed, quantitative information on which to do a lot of discussion until the spring, but that is fine. It's on our plans, and I'll work with Toni and Bob and all to get, I guess a meeting on the winter schedule. Toni, anything you want to add to that?

MS. KERNS: I'll just state, if there is any information that the Board does want us to bring forward at that February meeting to aid in that discussion, to please send myself or Kirby an e-mail, and we'll start working on that.

CHAIR WOODWARD: Anything else? Any other business that has arisen during the course of today's meeting that we need to discuss? Any hands up, Toni?

MR. KERNS: No, no other hands are up.

CHAIR WOODWARD: Well again, I would like to thank everybody. These virtual meetings are a challenge, but I guess we're getting sort of used to them, hopefully not too used to them. We would all rather be doing this face to face in our old traditional way, and hopefully that will happen, sometime in the not too distant future. Before I call for a motion to adjourn, I just want to make sure that everybody knows that this will be Max's last meeting with us.

Max is moving to NOAA Fisheries; effective I guess November 1. Max has done a great job, he has filled in for Kirby at this meeting while Kirby was off enjoying fatherhood, and the lack of sleep that typically comes along with it. Actually, Max has done a great job, and I personally appreciate everything he has done to kind of help me.

All of us who chair boards know that it's the staff makes us or breaks us, and Max and Kirby, and Toni, all have done a great job. I want to just express my personal thanks. You know we're all giving him a virtual round of applause, and wish him the best. I have a feeling that we will probably be seeing him again in his new role. With that Max, would you like to say anything?

MR. APPELMAN: I'm not good with these thankful speeches, but I really appreciate that, Spud, and I look forward to working with everyone in the future.

ADJOURNMENT

CHAIR WOODWARD: Thank you. All right, with no other business to come before the management board, can I have a motion to adjourn, raise your hand.

MS. KERNS: Motion to adjourn by Mel Bell.

CHAIR WOODWARD: Very good, okay with that we will conclude our business, and I guess we'll reconvene this afternoon for South Atlantic Board. Well thanks everybody.

(Whereupon the meeting adjourned at
11:30 a.m. on October 20, 2020.)

Tina Berger

Subject: FW: [External] Fwd: Menhaden comments for February meetings
Attachments: 2021-01-11_151504 concept 2.pdf; 2020-05-25_171450 Alexs story.pdf; 2020-08-25_220701 WATTS.pdf; 2020-10-12_095502 CBF Release.pdf; 2021-01-11_095931 concept 1..pdf

From: Tom Lilly [mailto:foragematters@aol.com]
Sent: Monday, January 11, 2021 4:31 PM
To: Tina Berger <tberger@asmfc.org>
Subject: [External] Fwd: Menhaden comments for February meetings

To: The ASMFC Policy Board, Staff and Menhaden Board

We are submitting two concepts for consideration (scans 5931,1504) The goal here is to begin a discussion at the Board level of the best way to begin restoring the fish and wildlife of Chesapeake Bay by getting them the menhaden they need at the right place and time and in a predictable amount.

The pandemic has upended the lives of millions of ordinary families in the Chesapeake Bay area. There are hundreds of thousands of families on the bay that want to spend more safe time together on or beside our hundreds of creeks and rivers and the bay itself enjoying wildlife and fishing. Among them are the first line caretakers, police , emts and the grocery clerks , the fast food workers. the nurses and doctors and countless others who have put their life on the line for us. These hard working families include the food fish watermen,the charter captains and the anglers. We owe it to all these families to make the out of doors experiences that are so vital now the best they can be. You managers can change the situation on my part of the bay that is very quiet, where there is practically no one fishing. even on the nicest days. Where at least half of our treasured ospreys had nesting failures this summer where they have resorted to catfish and box turtles because they can't find menhaden, where the nearby great heron rookery has disappeared in the last three years, where the charter boats are dwindling and go out about a tenth of what they did and where sadly the fall schooling of the baby bunker that brought with it the great fall fishing here in Whitehaven for a month each year has declined to about nothing. Most of the resident fish we catch are very thin with empty stomachs even late in the day.

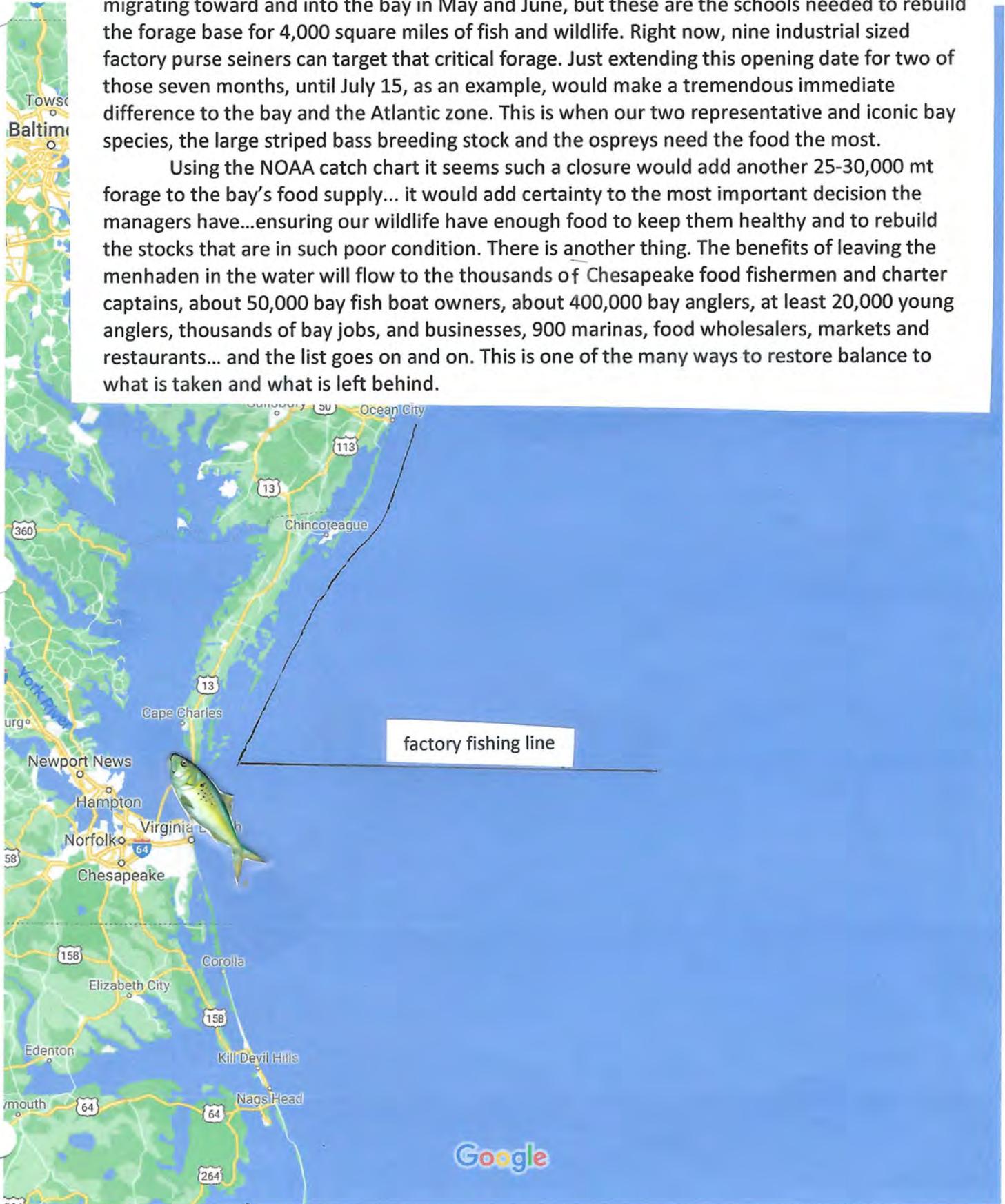
There are many sensible measures you can take to change this situation for the better (scans 5502,0701) The socio-economic benefits to the people should be an important part of that discussion. We know everyone is busy but please find time to think about this...can we please have a response from you about this before the meeting and what you think can be done now to help Chesapeake bay. Thank you Tom Lilly 443 235 4465

G

CONCEPT...DELAY OPENING THE SEASON FOR A TIME THE MANAGERS FIND APPROPRIATE, THEN ALLOW FACTORY FISHING ONLY IN THE US ATLANTIC ZONE NORTH OF CAPE CHARLES

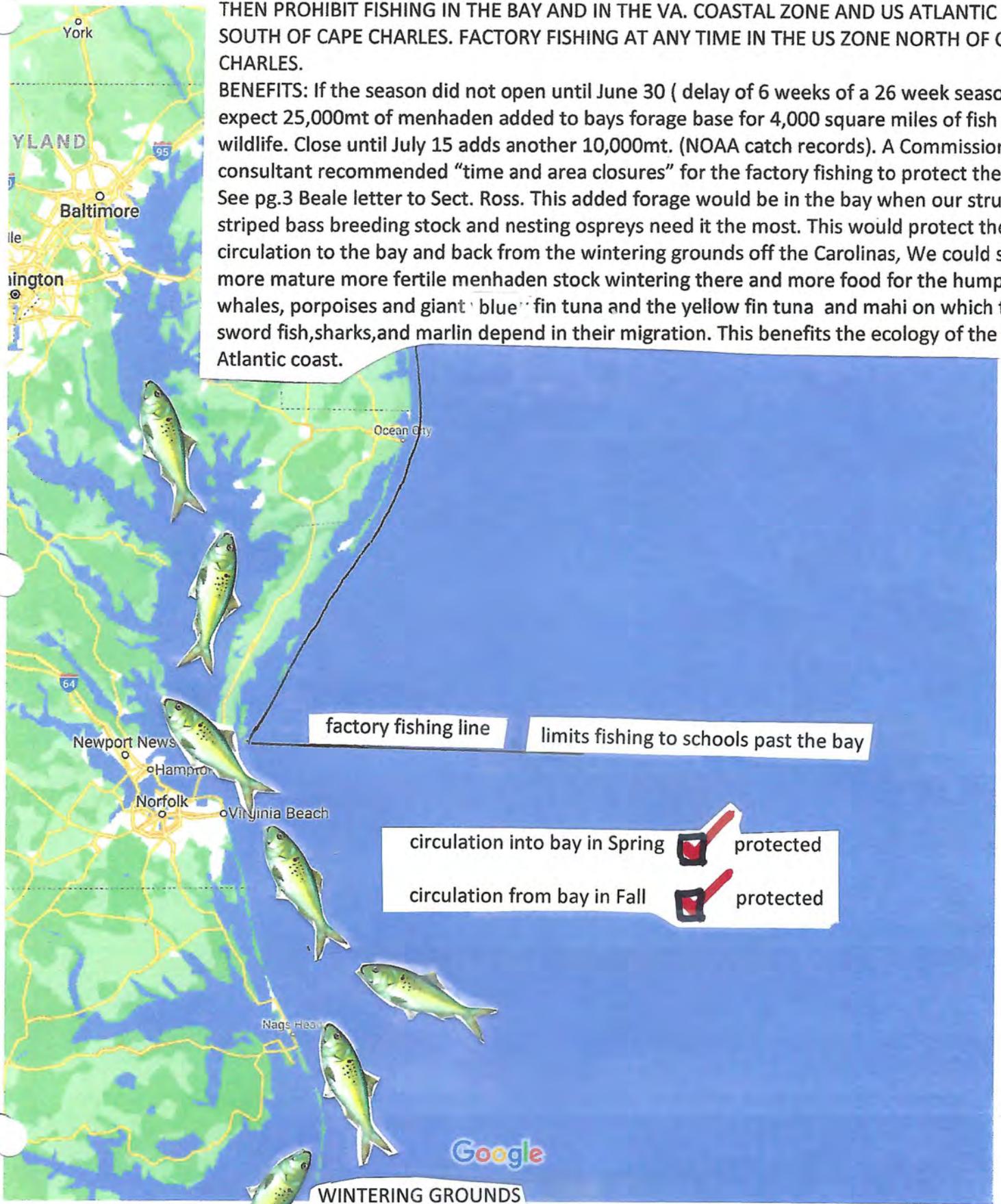
The factory menhaden season is seven months starting in May. Relatively few schools are migrating toward and into the bay in May and June, but these are the schools needed to rebuild the forage base for 4,000 square miles of fish and wildlife. Right now, nine industrial sized factory purse seiners can target that critical forage. Just extending this opening date for two of those seven months, until July 15, as an example, would make a tremendous immediate difference to the bay and the Atlantic zone. This is when our two representative and iconic bay species, the large striped bass breeding stock and the ospreys need the food the most.

Using the NOAA catch chart it seems such a closure would add another 25-30,000 mt forage to the bay's food supply... it would add certainty to the most important decision the managers have...ensuring our wildlife have enough food to keep them healthy and to rebuild the stocks that are in such poor condition. There is another thing. The benefits of leaving the menhaden in the water will flow to the thousands of Chesapeake food fishermen and charter captains, about 50,000 bay fish boat owners, about 400,000 bay anglers, at least 20,000 young anglers, thousands of bay jobs, and businesses, 900 marinas, food wholesalers, markets and restaurants... and the list goes on and on. This is one of the many ways to restore balance to what is taken and what is left behind.



CONCEPT 2. (least change) DELAY OPENING FACTORY FISHING IN THE VIRGINIA BAY AND VA ATLANTIC ZONE FOR ENOUGH TIME TO HAVE THE BAY'S MENHADEN FORAGE BASE RECOVER THEN PROHIBIT FISHING IN THE BAY AND IN THE VA. COASTAL ZONE AND US ATLANTIC ZONE SOUTH OF CAPE CHARLES. FACTORY FISHING AT ANY TIME IN THE US ZONE NORTH OF CAPE CHARLES.

BENEFITS: If the season did not open until June 30 (delay of 6 weeks of a 26 week season) expect 25,000mt of menhaden added to bays forage base for 4,000 square miles of fish and wildlife. Close until July 15 adds another 10,000mt. (NOAA catch records). A Commission consultant recommended "time and area closures" for the factory fishing to protect the bay. See pg.3 Beale letter to Sect. Ross. This added forage would be in the bay when our struggling striped bass breeding stock and nesting ospreys need it the most. This would protect the circulation to the bay and back from the wintering grounds off the Carolinas, We could see a more mature more fertile menhaden stock wintering there and more food for the hump-back whales, porpoises and giant blue fin tuna and the yellow fin tuna and mahi on which the sword fish,sharks,and marlin depend in their migration. This benefits the ecology of the entire Atlantic coast.





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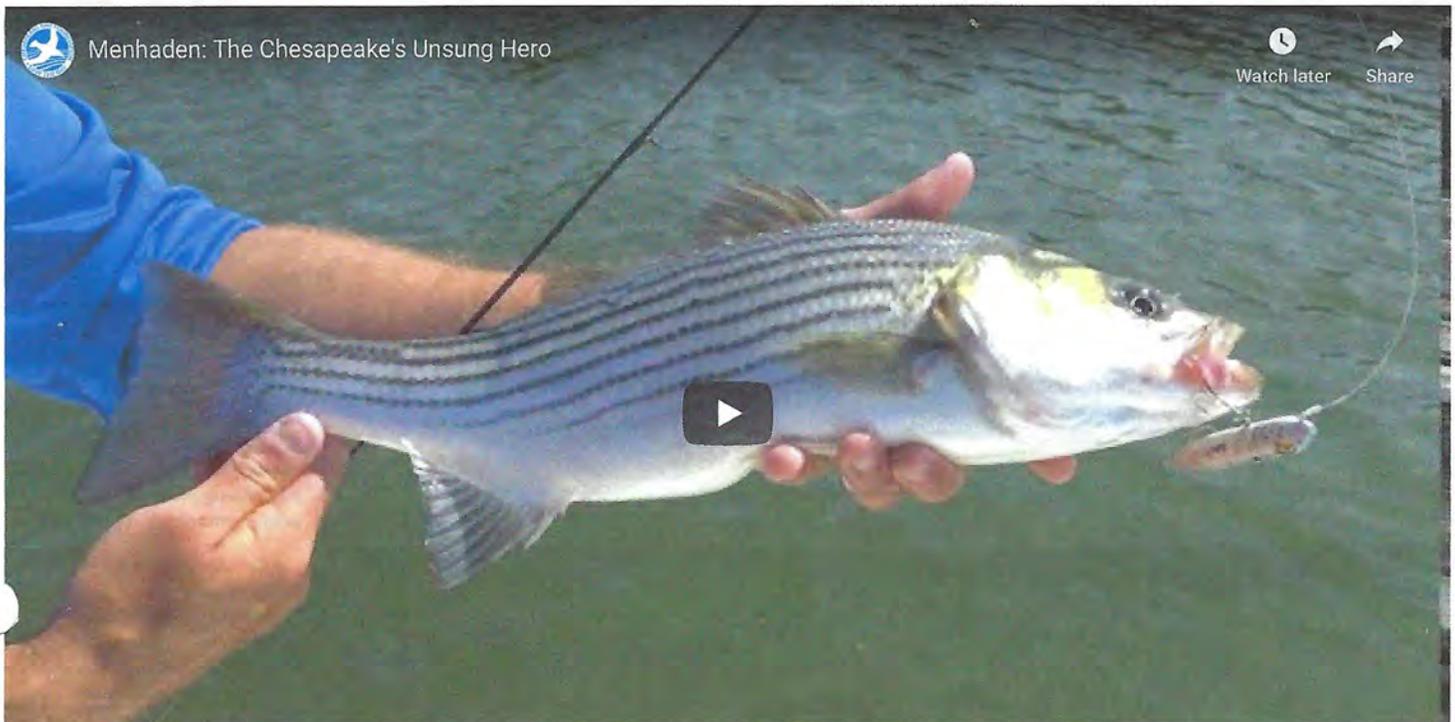
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Close

ATLANTIC MENHADEN



47 9/05

The Most Important Fish in the Bay

UPDATE: August 5, 2020—the Atlantic States Marine Fisheries Commission has taken the first step to formally consider the importance of menhaden to other predators, including striped bass, bluefish, and weakfish, in its management framework. This is the first time that ASMFC has committed to including Ecological Reference Points, the value of the species to the ecosystem, in its fishery management plans. ([Read CBF's press release](http://www.cbf.org/news-media/newsroom/2020/all/asmfc-adopts-groundbreaking-change-to-menhaden-fishery-management.html)) (<http://www.cbf.org/news-media/newsroom/2020/all/asmfc-adopts-groundbreaking-change-to-menhaden-fishery-management.html>)

Atlantic menhaden, *Brevoortia tyrannus*, are small, nutrient-packed fish that are central to the Chesapeake Bay's food chain and support one of the largest commercial fisheries on the Atlantic coast. As a result of their environmental and economic importance, management of the menhaden fishery is a political flashpoint across the region.

Why are menhaden (also called bunker or pogey) important in the Chesapeake Bay?

Menhaden have been called the "most important fish in the sea." In the Bay, they create a vital connection between the bottom and top of the food chain. They eat tiny plants and animals, called plankton, by filtering them from the water. In turn, menhaden are a rich food source for many predator fish—including [rockfish](http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/rockfish/) (striped bass), bluefish, and weakfish—as well as [ospreys](http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/ospreys/), bald eagles, dolphins, and whales. (See our video, [Why Whales Follow Menhaden into the Bay](http://www.cbf.org/news-media/multimedia/video/why-whales-follow-menhaden-into-the-bay.html).)

Rockfish, in particular, historically relied on menhaden for a large portion of their diet. Researchers have raised concerns that a lack of menhaden could make rockfish more vulnerable to disease.

Why should I care about menhaden?

MENHADEN
(/ABOUT-THE-
BAY/MORE-THAN-
JUST-THE-
BAY/CHESAPEAKE-
WILDLIFE/MENHADEN

American Shad
(<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/american-shad/>)

Blue Crabs
(<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/blue-crabs/>)

Cormorants
(<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/cormorants-the-miraculous-comeback-of-a-misunderstood-bird.html>)

Cownose Ray
(<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/misunderstood-the-cownose.html>)

Eastern Oysters
(<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/eastern-oysters/>)

Lined Seahorse
(<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/the-lined-seahorse-a-rare-romantic.html>)

Loon
(<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/call-of-the-loon.html>)

▶ Menhaden
(<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/menhaden/>)

A Timeline of Menhaden Conservation
(<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/menhaden/timeline->

If you enjoy feeling the tug of a big rockfish on the end of your line (and savoring the taste of it at dinner) or watching osprey snatch a silvery fish from the water, you have menhaden to thank! These small fish are the unsung heroes of the Chesapeake Bay, providing a rich food source for many of our favorite critters.

[of-menhaden-conservation.html](http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/northern-green-frog-at-home-in-the-bog.html)

Northern Green Frog
<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/northern-green-frog-at-home-in-the-bog.html>

Ospreys
<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/ospreys/>

Pelicans
<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/moving-on-up-pelicans-are-at-home-on-the-bay.html>

River Otters
<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/aquatic-ambassadors-river-otters-are-poster-pups-for-conservation.html>

Rockfish
<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/rockfish/>

Sea Nettles
<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/sea-nettles.html>

Smallmouth Bass
<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/smallmouth-bass.html>

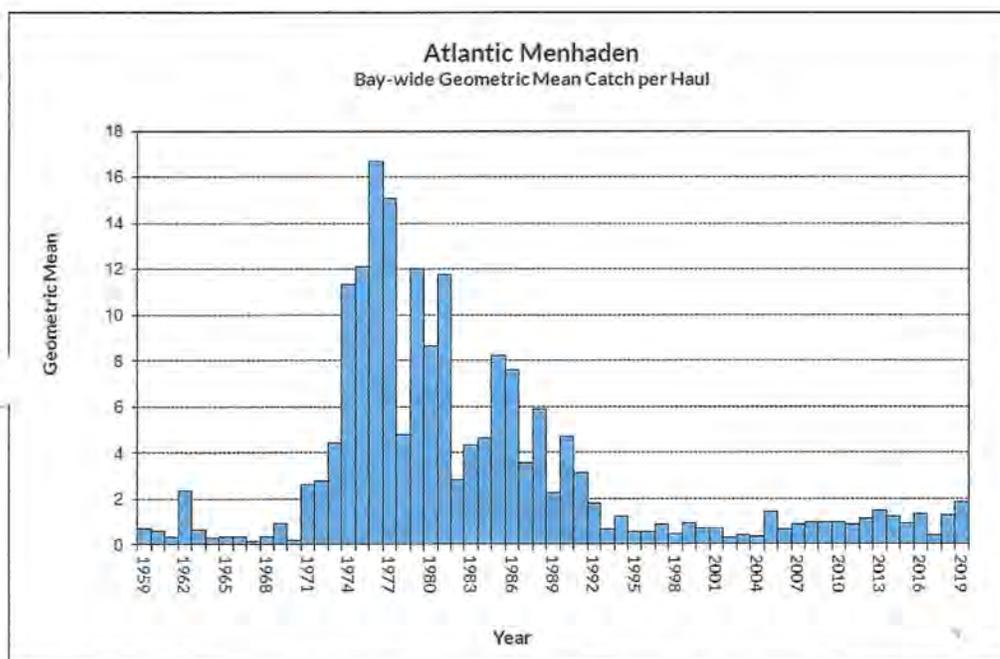
Sturgeon
<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/sturgeon.html>

Terrapins
<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/terrapins-swimming-for-shore.html>

Tundra Swans
<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/tundra-swans-a-fading-winter-chorus-in-the-chesapeake.html>

What are the threats facing menhaden?

The Bay is one of the most important nurseries for menhaden, helping to sustain the population along the Atlantic coast. Menhaden eggs hatch in the open ocean before drifting on currents into the Bay, where juvenile fish live and grow for their first year of life. But long-running scientific surveys show the number of young menhaden in the Chesapeake Bay dropped dramatically in the early 1990s and remains low.



This graph represents the average number of juvenile menhaden available ("abundance"), which has a direct impact for predators like striped bass and osprey. Unfortunately, the number of young menhaden produced in the Bay each year has been poor for the last 20 years.

DURELL, E.Q., AND WEEDON, C. 2019. STRIPED BASS SEINE SURVEY JUVENILE INDEX WEB PAGE. DNR.MARYLAND.GOV/FISHERIES/PAGES/JUVENILE-INDEX.ASPX. MARYLAND DEPARTMENT OF NATURAL RESOURCES, FISHERIES SERVICE

At the same time, almost three-quarters of all menhaden caught on the East Coast are harvested by the Omega Protein Corporation—a Canadian-owned company that fishes largely in or near the mouth of the Bay. Omega operates the sole remaining menhaden reduction facility on the U.S. East Coast in Reedville, Virginia. The plant reduces (cooks and grinds up) the fish for a variety of uses, such as nutritional supplements, food additives, and feed for livestock and fish farms.

Menhaden by the Numbers

70%

The amount of an adult rockfish's diet historically filled by menhaden.

8%

The amount of an adult rockfish's diet currently filled by menhaden.

[g/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/menhaden/index.html](http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/menhaden/index.html)

Stay up to date about the Bay!

8%

The rockfish population in the Chesapeake Bay is showing signs of malnourishment and increasing mortality.

75%

The amount of an osprey nestling's diet filled by menhaden in the 1980s.

28%

The amount of an osprey nestling's diet filled by menhaden today. Though the number of nests throughout the Bay region has improved, nestling mortality is as high as it was in the DDT era.

65%

The annual removal of adult menhaden from East Coast waters.

2,500

The number of jobs supported by menhaden-dependent species in Virginia alone.

\$236

In millions, the total amount fishing for menhaden-dependent species contributes to Virginia's economy.

8%

The current Atlantic menhaden population compared against historical levels.

Why is there a harvest cap for menhaden in the Bay?

Menhaden migrate along the Atlantic coast from Florida to Maine. An interstate governing body—the Atlantic States Marine Fisheries Commission (ASMFC)—manages the fishery for the 15 states that share the coastline.

Over the past two decades, fishery managers have raised concerns that the concentration of fishing effort in Bay waters could disrupt the Bay's food chain, harming populations of rockfish and other predator species. As a precaution, the ASMFC first set a cap for Omega's industrial menhaden harvest in the Bay in 2006. In 2017, the ASMFC voted to update the cap to reflect more recent menhaden harvest levels in the Bay.

In blatant disregard for the fishery management process, Omega knowingly exceeded the cap in 2019 (<http://www.cbf.org/news-media/newsroom/2019/virginia/cbf-expresses-deep-concern-with-omega-proteins-announcement-it-will-violate-the-bay-menhaden-cap.html>). The violation resulted in a unanimous ASMFC vote (<http://www.cbf.org/news-media/newsroom/2019/virginia/fisheries-board-finds-virginia-out-of-compliance-with-menhaden-harvest-cap.html>) referring Virginia to the U.S. Department of Commerce for noncompliance with interstate fishery rules. The Secretary of Commerce decided to uphold the ASMFC decision (<http://www.cbf.org/news-media/newsroom/2019/virginia/us-commerce-department-takes-action-after-virginia-menhaden-limit-exceeded.html>). The new harvest cap approved by the VMRC in April 2020 lowers the amount of menhaden that

**SIGN UP
([HTTP://WWW.
US/STAY-UP-
TO-DATE-
ABOUT-THE-
BAY.HTML](http://www.us-stay-up-to-date-about-the-bay.html))**

In the News

08/05/20: ASMFC Adopts Groundbreaking Change to Menhaden Fishery Management (<http://www.cbf.org/news-media/newsroom/2020/all/asmfc-adopts-groundbreaking-change-to-menhaden-fishery-management.html>)

04/28/20: New Menhaden Limits Approved by VMRC, Preventing Fishery Shutdown (<http://www.cbf.org/news-media/newsroom/2020/virginia/menhaden-limits-approved-by-vmrc-preventing-fishery-shutdown.html>)

02/27/20: Menhaden Legislation Approved by Virginia House And Senate (<http://www.cbf.org/news-media/newsroom/2020/virginia/legislation-approved-by-virginia-house-and-senate.html>)

01/29/20: Menhaden Legislation Approved by Virginia House and Senate Committees (<http://www.cbf.org/news-media/newsroom/2020/virginia/legislation-approved-by-virginia-house-and-senate-committees.html>)

12/19/19: U.S. Commerce Department Takes Action after Virginia Menhaden Limit Exceeded (<http://www.cbf.org/news-media/newsroom/2019/virginia/commerce-department-takes-action-after-virginia-menhaden-limit-exceeded.html>)

11/21/19: CBF Statement on Gov. Northam's Call for Action on Menhaden (<http://www.cbf.org/news-media/newsroom/2019/virginia/c>)

can be caught in the Chesapeake Bay to 51,000 metric tons per year. Due to Omega Protein's excess harvest during the 2019 fishing season, this year's level will be further lowered to 36,192 metric tons. The VMRC's action avoids a shutdown of the menhaden fishery due to noncompliance with the ASMFC.

statement-on-gov-northams-call-for-action-on-menhaden.html)

VIEW MORE [\(HTTPS://WWW MEDIA/NEWS/ PRIMARY_ISSUE](https://www.media/news/primary_issue)

How can better management protect menhaden and the Bay?

For more than 25 years (<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/menhaden/timeline-of-menhaden-conservation.html>), CBF has worked with partners toward a healthy menhaden population in the Chesapeake Bay to ensure that this nutrient-packed fish can fulfill its key role in the food chain. In 2012, ASMFC's Benchmark Stock Assessment showed the total menhaden population was at its lowest level on record. Peer-reviewed population estimates showed menhaden have been overfished for 32 of the past 54 years. A strong fisheries management plan was needed to rebuild the population, and once rebuilt, to maintain it. (See [A Timeline of Menhaden Conservation](http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/menhaden/timeline-of-menhaden-conservation.html) (<http://www.cbf.org/about-the-bay/more-than-just-the-bay/chesapeake-wildlife/menhaden/timeline-of-menhaden-conservation.html>).

For decades, management decisions and catch limits relied on "single species" stock assessments, independent of other species. In other words, **they accounted for demand from the fishing industry, but did not account for demand from rockfish, osprey, and other animals that rely on menhaden for food.** This did not necessarily mean there would be sufficient stock to sustain the larger ecosystem needs.

That changed in August 2020, when the ASMFC adopted benchmarks, known as **ecological reference points** (<http://www.cbf.org/blogs/save-the-bay/2017/10/a-historic-opportunity-for-fish-and-fishermen.html>), that will allow managers to **account for menhaden's role in the food chain** and set catch limits accordingly. CBF has been a strong proponent of this process and will continue to advocate for an ecosystem-based approach to menhaden management.



SAVE THE BAY

Founded in 1967, the Chesapeake Bay Foundation (CBF) is the largest independent conservation organization dedicated solely to saving the Bay.



The Center for Conservation Biology

William & Mary

20 August 2020

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The Honorable Ralph Northam
Governor, State of Virginia
PO Box 1475
Richmond, VA 23218

Dear Governor Northam,

The menhaden is a keystone fish within the Chesapeake Bay ecosystem. Many of our most iconic species including the bald eagle, osprey, great blue heron and brown pelican depend on menhaden stocks to sustain their breeding populations within the Bay. Other species such as common loons and northern gannets that stage within the Chesapeake also depend on menhaden to fuel their migrations. Approximately 30% of the North Atlantic gannet population comes into the Bay during the spring to feed on menhaden before flying north to breeding grounds in Newfoundland.

Deep withdraws of menhaden stocks for the reduction fishery is having an impact on consumer species. We have conducted fieldwork with osprey throughout the lower Chesapeake Bay for 50 years and data demonstrate ongoing impacts. Through three generations of graduate students (1975-2006) we have observed shifts in diet and an associated reduction in productivity. Fish delivery rates were more than three times higher in 1975 compared to 2006. Menhaden, once the dominant fish in the diet now represents less than 30%. Shifts in diet away from menhaden have been coincident with a 90% reduction in menhaden stocks (Maryland, DNR haul surveys). No other fish species available to consumers provides the energy content of menhaden. Reductions in menhaden stocks have caused osprey productivity to decline to below DDT-era rates. These rates are insufficient to support the osprey population within the main stem of the Bay.

Menhaden provide critical ecosystem services within the Chesapeake Bay. We request that the needs of the broader ecosystem be considered when setting harvest policy and that menhaden stocks be maintained at levels that support a healthy Chesapeake Bay ecosystem.

Sincerely,

Bryan D. Watts, Ph.D.
Mitchell A. Byrd Professor of Conservation Biology
Director, Center for Conservation Biology
College of William and Mary

GRANDSON ALEX TAKEN ABOUT TEN YEARS AGO. MOST OF THE KIDS AND THEIR PARENTS HAVE LOST INTERESTFISHING JUST "ISN'T FUN ANYMORE"

Lets do the math. The bay's 400,000 fishing families aren't fishing much these days..the fishing has gotten worse and worse. Lets get the Chesapeake Bay the food their fish and wildlife need and deserve. Let's add more healthy fish to the equation. These families might get out on the bay a few more times a Summer and maybe have some great adventures. That could be another one million more precious days each year these parents and grandparents would have together enjoying the great sights and sounds Chesapeake bay has to offer. That is what is at stake here.



Atlantic States Marine Fisheries Commission

Atlantic Herring Management Board

February 2, 2021

4:00 – 5:15 p.m.

Webinar

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

- | | |
|---|-----------|
| 1. Welcome/Call to Order (<i>C. Patterson</i>) | 4:00 p.m. |
| 2. Board Consent | 4:00 p.m. |
| • Approval of Agenda | |
| • Approval of Proceedings from October 2020 | |
| 3. Public Comment | 4:05 p.m. |
| 4. Set Sub-Annual Catch Limit for the 2021-2023 Fishing Years
(<i>K. Rootes-Murdy</i>) Final Action | 4:15 p.m. |
| 5. Update on Amendment 8 and Consider Impacts to Area 1A Fishery
(<i>K. Rootes-Murdy</i>) | 4:30 p.m. |
| 6. Update on New England Fishery Management Council and Commission
Coordination Discussions (<i>R. Beal</i>) | 5:00 p.m. |
| 7. Other Business/Adjourn | 5:15 p.m. |

MEETING OVERVIEW

Atlantic Herring Management Board

Tuesday, February 2, 2021

4:00 p.m. – 5:15 p.m.

Webinar

Chair: Cheri Patterson (NH) Assumed Chairmanship: 02/20	Technical Committee Chair: Renee Zobel (NH)	Law Enforcement Committee Representative: Delayne Brown (NH)
Vice Chair: Megan Ware (ME)	Advisory Panel Chair: Jeff Kaelin (NJ)	Previous Board Meeting: October 19, 2020
Voting Members: ME, NH, MA, RI, CT, NY, NJ, NMFS, USFWS (9 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from October 2020

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Set Sub-Annual Catch Limit for the 2021-2023 Fishing Years (4:15-4:30 p.m.) Final Action

Background

- In October the Board set seasonal allocations for the 2020 Area 1A fishery but the sub-ACL specifications were not available at the time. The New England Fishery Management Council (Council) recommended specifications for 2021-2023 through Framework 8 to NOAA Fisheries in September 2020. **(Briefing Materials)**
- NOAA Fisheries is still reviewing Framework 8, therefore a proposed rule on 2021-2023 sub-ACL specifications has not been published yet. A final rule is expected to be published after the Board Meeting.

Presentations

- Overview of the 2021-2023 sub-ACL specifications by K. Rootes-Murdy

Board actions for consideration at this meeting

- Set the 2021-2023 sub-ACL specifications via Board motion, pending release of a proposed rule by NOAA Fisheries

5. Update on Amendment 8 and Consider Impacts to Area 1A Fishery (4:30-5:00 p.m.)

Background

- Amendment 8 was initiated by the Council in 2014. The Amendment specifies changes to Atlantic herring management including the establishment of a long-term acceptable biological catch control rule and the prohibition of midwater trawl gear inshore of 12-nautical mile from Canada to Connecticut and inshore of 20 nautical miles off the east coast of Cape Cod.
- NOAA Fisheries recently published a final rule on the Amendment, with an effective date of February 10, 2021 (**Briefing Materials**)

Presentations

- Update on Amendment 8 and Potential Impacts to Area 1A Fishery by K. Rootes-Murdy

6. Update on New England Fishery Management Council and Commission Coordination Discussions (5:00-5:15 p.m.)

Background

- Concerns have been raised in recent years that management alternatives considered by the Commission may have been inconsistent with the federal Atlantic Herring FMP and Council comments on specific measures may not be given appropriate consideration by the Commission.
- A technical work group of Commission Plan Review Team and Council Plan Development Team members, co-chaired by the Commission Herring Board and Council Herring Committee chairs, met in 2020 to discuss a proposed list of shared management responsibilities for review by Leadership.

Presentations

- Update by R. Beal

7. Other Business/Adjourn

Atlantic Herring Technical Committee Task List

Activity Level: Medium

Committee Overlap Score: Medium

Committee Task List

While there are no Board tasks for the TC at present, there are several annual activities in which TC members participate, both through the Commission and NEFMC

- Participation on ASMFC PDT
- Participation on NEFMC PDT (currently working on Framework 7)
- Summer/fall collection of spawning samples per the spawning closure protocol
- Annual state compliance reports are due February 1

TC Members

Renee Zobel (NHFG – Chair), Kurt Gottschall (CT DMF), Dr. Matt Cieri (ME DMR), Micah Dean (MA DMF), Corinne Truesdale (RI DFW), Deirdre Boelke (NEMFC), Jonathan Deroba (NOAA NEFSC), Carrie Nordeen (NOAA)

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
ATLANTIC HERRING MANAGEMENT BOARD**

**Webinar
October 19, 2020**

These minutes are draft and subject to approval by the Atlantic Herring Management Board.
The Board will review the minutes during its next meeting.

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These minutes are draft and subject to approval by Atlantic Herring Management Board.
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INDEX OF MOTIONS

1. **Move to approve agenda** by Consent (Page 1).
2. **Move to approve proceedings of August 5, 2020** by Consent (Page 1).
3. **Move to allocate the 2021 Area 1A Sub-ACL seasonally with 72.8 percent available from June through September, and 27.2 percent allocated from October through December. The fishery will close when 92 percent of the seasonal period's quota has been projected to be harvested, and underages from June through September shall be rolled into the October through December period** (Page 3). Motion by Megan Ware; second by Ray Kane. Motion carried (Page 4).
4. **Motion to adjourn** by Consent (Page 5).

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The Board will review the minutes during its next meeting.

Draft Proceedings of the Atlantic Herring Management Board
October 2020

ATTENDANCE

Board Members

Megan Ware, ME, proxy for P. Keliher (AA)	Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Sen. David Miramant, ME (LA)	Matt Gates, CT, proxy for J. Davis (AA)
Cheri Patterson, NH (AA), Chair	Bill Hyatt, CT (GA)
G. Ritchie White, NH (GA)	Jim Gilmore, NY (AA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Emerson Hasbrouck, NY (GA)
Dan McKiernan, MA (AA)	John McMurray, NY, proxy for Sen. Kaminsky (LA)
Raymond Kane, MA (GA)	Joe Cimino, NJ (AA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Tom Fote, NJ (GA)
Conor McManus, RI, proxy for J. McNamee (AA)	Adam Nowalsky, NJ, proxy for Asm. Houghtaling (LA)
David Borden, RI (GA)	Allison Murphy, NMFS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Renee Zobel, Technical Committee Chair	Delayne Brown, Law Enforcement Representative
Jeff Kaelin, Advisory Panel Chair	

Staff

Robert Beal	Jeff Kipp
Toni Kerns	Laura Leach
Maya Drzewicki	Savannah Lewis
Kristen Anstead	Sarah Murray
Max Appelman	Caitlin Starks
Dustin Colson Leaning	Deke Tompkins
Chris Jacobs	Geoff White

Guests

Pat Augustine, Coram, NY	Aubrey Ellertson, CFR Foundation
Michael Auriemma, NJ DEP	Marianne Ferguson, NOAA
Richard Balouskus, RI DEM	Cynthia Ferrio, NOAA
Peter Benoit, Ofc. of Sen. King, ME	Rick Frenzel, BlackTree Inc
Dave Bethoney, U MASS	Emily Gilbert, NOAA
Deidre Boelke, NEFMC	Willy Goldsmith, SGA
Jeff Brust, NJ DEP	Zoe Goozner, Pew Trusts
Beth Casoni, MA Lobstermen Assn.	Kurt Gottschall, CT DMF
Mike Celestino, NJ DEP	Melanie Griffin
Benson Chiles, Chiles Consulting	Matthew Heyl, NJ DEP
Matt Cieri, ME DMR	Wilson Laney
Heather Corbett, NJ DEP	Chip Lynch, NOAA
Kathy Cyr, USCG	John Maniscalco, NYS DEC
Jessica Daher, NJ DEP	Matthew Rogers, VMRC

These minutes are draft and subject to approval by the Atlantic Herring Management Board.
The Board will review the minutes during its next meeting.

Guests (Continued)

Nichola Meserve, MA DMF
Brandon Muffley, MAFMC
Allison Murphy, NOAA
Derek Orner, NOAA
Nick Popoff, FL FSW
Brandon Raguz, NOAA
Brad Schondelmeier, MA DMF
Tara Scott, NOAA
Melissa Smith, ME DMR

Stephanie Sykes, Cape Cod Fishermen
Corinne Truesdale, RI DEM
Beth Versak, MD DNR
Mike Waine, ASA
Ashley Weston, NOAA
Kate Wilke, TNC
Chris Wright, NOAA
Erik Zlokovitz, MD DNR

The Atlantic Herring Management Board of the Atlantic States Marine Fisheries Commission convened via webinar; Monday, October 19, 2020, and was called to order at 9:00 a.m. by Chair Cheri Patterson.

CALL TO ORDER

CHAIR CHERI PATTERSON: Well good morning, and welcome to the Atlantic Herring Management Board webinar. I'm Cheri Patterson, the Chairperson, and I would like to call the meeting to order at this point. I hope everybody is doing well and hanging in there. We won't be conducting a roll call.

Toni has already essentially accounted for people to be on the Board, and whether we have a quorum or not, so we will not be conducting that roll call process.

APPROVAL OF AGENDA

CHAIR PATTERSON: I would like to move forward with the Board's consent to approve the agenda. Are there any objections or edits to approving the agenda from the Board members? If so, please raise your hand. Whose hand is raised?

MS. TONI KERNS: David Miramant.

CHAIR PATTERSON: David, go ahead.

SENATOR DAVID MIRAMANT: In error, never mind.

CHAIR PATTERSON: Okay, thank you. Seeing no hands raised, then the agenda is approved.

APPROVAL OF PROCEEDINGS

CHAIR PATTERSON: I would like to move forward with approving the proceedings, the August 2020 meeting. Is there any edits or changes to the proceedings? If so, please raise your hand.

MS. KERNS: There are no hands raised.

CHAIR PATTERSON: The proceedings are approved by consent.

PUBLIC COMMENT

CHAIR PATTERSON: Is there any public comment?

MS. KERNS: I don't see any hands raised, Cheri.

SET 2021 FISHERIES SPECIFICATIONS

CHAIR PATTERSON: Let's move forward with the 2021 Fisheries Specifications. We will be looking at setting the next quota period for Area 1A for next year. That will be our final action for this, and we will be getting an update on the Fisheries Specifications from Max. Go ahead, Max.

MR. MAX APPELMAN: You should see the presentation up on the screen. Thank you again, Madam Chair, and good morning everyone. I have two sets of slides. The first is just to review the 2021-2023 Specs Package, and then another set of slides to review the decisions before the Board today regarding Area 1A in 2021.

First for specifications, they were again done through a framework action, Framework 8, which was approved by the Council late last month. A press release from the Council was included in your briefing materials, and in there are specifications for 2021 to 2023. That framework was submitted to NOAA Fisheries for a review, but a final rule has not been issued yet.

As far as catch limits, the framework proposes a lower catch limit for Area 1A. The Sub-ACL for 2021 is 1,391 metric tons, and then for 2022 and 2023 at 1,184 metric tons. Those catch limits were informed by results of the 2020 management track assessment, which the Board reviewed last August, and projections from that as well as recommendations from the Councils SSC, Advisory Panel, and of course the Herring Committee.

These catch limits are also informed by the ABC Control Rule, which is proposed in Amendment 8. It's a pretty significant decrease relative to 2020, which was already a low catch limit than the fishery is used

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The Board will review the minutes during its next meeting.

to seeing. Of note the initial package, the initial projections showed an increase in the ABC for 2023, but the SSC recommended maintaining the 2022 ABC into 2023, due to scientific uncertainty primarily around the recruitment estimates in the projections.

The results of the assessment continue to show low levels of recruitment in recent years. This recommendation is in line with previous SSC recommendations in the past. A few other key specifications from Framework 8, the management uncertainty buffer was set similarly to how it's been set in the past based on 10-year average of Canadian catches. The border transfer was set at 0 metric tons.

Typically, the Council allocates a small percentage of the ACL for at-sea transfers from U.S. vessels to Canadian vessels, but this activity has not occurred much in recent years. That was set at 0 metric tons to provide as much opportunity to the fishery. The RSA in 2022 and 2023 was set at 0 percent. Again, typically there is a 3 percent set aside for research.

However, it was discussed that at these very low catch limits 3 percent isn't really sufficient to support research. It was in the best interest to hold that set aside for the fishery. However, it was set at 3 percent for 2021, because research was already awarded this year, and some of that work is expected to wrap up in 2021, so maintaining that opportunity.

As far as the carryover, it was set at 5 percent. Typically, we see 10 percent rollover, and this was sort of viewed as a balance between providing more fishing opportunity for the fishery, while also maintaining protection for the resource during these years of a low biomass and low catch limits.

Then the last bullet under here is adjustments to the incidental catch limit for herring in Areas 2 and 3, to help harvesters fully utilize the mackerel quota. Notice that is for Areas 2 and 3. These decisions did not impact the catch

limits for the incidental possession limits for herring in Area 1A. Just letting folks know about the decisions there. You can see more details about that in the briefing materials. For the decisions around the 2023 specifications were sort of viewed as a placeholder. There is a management track assessment scheduled for 2022, and so it is likely that results of that management track would inform 2023 and forward, so it's likely that those specifications could change.

Just as a reminder that the implementation date for this framework is anticipated for January 1 of 2021. Again, this specs package in Framework 8 was approved by the Council late last month. It's been passed on to NOAA Fisheries for final review, but a final rule has not been issued yet. Madam Chair, so I thought this would be a good place to just stop if there are any questions from the Board on Framework 8. I do have another set of slides to review today's decisions for Area 1A in 2021, but if there are any questions on Framework 8, I am happy to take those now.

CHAIR PATTERSON: Thank you, Max. Board members, do you have any questions for Max, please raise your hand.

MS. KERNS: I don't see any hands raised, Cheri.

CHAIR PATTERSON: Okay Max, go ahead on to your next set of slides then, thank you.

MR. APPELMAN: Now we're talking about the decision points today. In a typical year at this time there would be two decision points available to the Board, a focus for the Board. The first would be to approve the specifications as recommended by the Council, and then the second one would be to determine the period allocation for the upcoming fishing season, whether it be seasonal, trimesters or bimonthly, with some qualifications as to when the periods would close, and how underages would be handled.

However, similar to last year and I think the year before that as well, at this time the specifications package has not been formally approved by NOAA. The Board waited for Final Rule from NOAA Fisheries

These minutes are draft and subject to approval by the Atlantic Herring Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the Atlantic Herring Management Board
October 2020

before setting specifications for the upcoming year. Of course, the Board could set them today as approved by the Council, but there would be a general understanding that those numbers could change, and that would certainly have to be addressed later.

In the past, last year and the years before, the Board has waited until February, once a final rule has been released, before setting specs. With that aside, the Board still needs to set a quota period for next year, and so that is the focus of today's decision. As a reminder, the quota periods are outlined in Amendment 3.

The Board can consider distributing the Area 1A Sub-ACL using bimonthly periods, using trimesters, or the seasonal quota approach. The Board can also decide whether quota from January 1 through May will be allocated to later in the fishing season. Just showing up on the screen what the Board decided for 2020.

It was a seasonal split with 72.8 percent of the quota allocated from June through September, and the remainder available from October through December. Here are the quota period options available in Amendment 3, keeping in mind these percentages are fixed. This is the suite of options available to the Board today. There are other Days Out measures available to control effort in the fishery, which are set later by the states of Maine, New Hampshire, Massachusetts, landing days, weekly landing limits, provisions on transfers and things like that.

Again, the Board for 2020 chose no landings prior to June 1, with 72.8 percent allocated from June to September, and 27.2 percent of the quota allocated from October to December. I'm sorry that was June to September and October to December. Just to recap again. The decision point today is really to set the quota periods for 2021, either seasonal, trimester, or bimonthly.

The Board could set specs for 2021 today if it so chooses, or like in the past wait until February, following final approval from NMFS, which was done the last few years. That is all I have, Madam Chair, happy to take any questions or of course move it to the Board for discussion.

CHAIR PATTERSON: Could you roll back one more slide, so people can see what we're going to be focusing on for decision points? Thank you. I would like to open up to the Board any questions in regards to this aspect of Max's presentation.

MS. KERNS: I don't see any hands yet, Cheri.

CHAIR PATTERSON: Is there any motion out there to set quota periods for the 2021 Area 1 Sub-ACL.

MS. KERNS: Megan Ware.

CHAIR PATTERSON: Megan, go ahead.

MS. MEGAN WARE: I had submitted a motion to staff, and if they are able to bring that up that would be helpful. My motion is to allocate the 2021 Area 1A Sub-ACL seasonally with 72.8 percent available from June through September, and 27.2 percent allocated from October through December. The fishery will close when 92 percent of the seasonal period's quota has been projected to be harvested, and underages from June through September shall be rolled into the October through December period.

CHAIR PATTERSON: Is there a second?

MS. KERNS: I have Ray Kane.

CHAIR PATTERSON: Thank you, Ray. Megan, would you like to speak to the motion?

MS. WARE: Sure, this is the same allocation we've used for this year, so it's just maintaining what we did in 2020 for 2021, and I think with the options that we currently have in Amendment 3, this is probably the best fit for right now.

CHAIR PATTERSON: Are there any questions towards this motion from the Board members?

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MS. KERNS: I see no hands.

CHAIR PATTERSON: Is there any questions or comment from the public?

MS. KERNS: I don't see any hands, and just as a reminder to raise your hand you click on the hand button and I think the red arrow will be pointed down when your hand is raised. I see none.

CHAIR PATTERSON: To move this motion forward, is there any opposition to this motion?

MS. KERNS: I see no hands raised.

CHAIR PATTERSON: Motion is approved by consent. Is there any other discussion on waiting for setting any other area specs to the February meeting?

MS. KERNS: I see no hands.

**UPDATE ON NEW ENGLAND FISHERY
MANAGEMENT COUNCIL AND COMMISSION
COORDINATION DISCUSSIONS**

CHAIR PATTERSON: Okay. That moves us to the next agenda item. Where there have been some concerns in the recent years raised on having Commission versus Council inconsistencies in developing measures for Atlantic herring. Therefore, the Council and Commission leadership discussed these issues.

They put together a technical workgroup to see if there can't be any sort of agreement on defining roles of each of those management bodies being the Commission and the Council, by identifying which measures that each would be addressing for managing Atlantic herring. I will turn over to Toni an update on the coordination discussions in regards to this concern.

MS. KERNS: Thank you, Madam Chair. I'm actually going to defer to Bob Beal on this issue.

CHAIR PATTERSON: Go ahead, Bob.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Good morning, Cheri, and thank you for the time, and welcome everyone to the 79th Annual Meeting. It doesn't seem like a normal annual meeting, and it doesn't seem like New Jersey where I am, but that's okay. We'll make it through this week, I suppose.

Yes, just to give a bit of an update to follow on what the Chair said. You know Cheri noted there has been ongoing discussions for a number of years about responsibilities and roles, and jurisdictional questions between ASMFC and the New England Council involving Atlantic herring.

The leadership group has met a couple times, composed of the Chairs, Vice-Chairs, and Executive Directors, and talked about how to coordinate things better. A couple meetings two or three years ago, the outcome was sort of an agreement to coordinate better, and a voting seat was set up on New England Council's Committee, and we transitioned from a Section to a management board to allow a voting seat for New England Council on the Commission's management body. Even with those adjustments to the coordination there are still some remaining concerns about how different responsibilities are divided up. As the Chair said, a working group was formed. They pulled together a really comprehensive white paper that gave a great background on the sea herring fishery, and the history of management actions of the Council and Commission, and it included a series of suggestions on improved coordination, and allocating roles and responsibilities moving forward.

There is a great work product coming out of that group. The leadership group, Chairs, Vice-Chairs and Executive Directors met again last week to review the working paper, and had an initial discussion. No decisions were made. We agreed to all go home, sort of digest the paper a little bit more, and we'll get back together in a few weeks.

We just didn't have sufficient time to review the paper and come up with any concrete recommendations prior to this meeting. We are kind of all reading the paper and thinking about where we want to go from

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here, and how to better coordinate the issues associated with these different roles and responsibility.

That is the update. We've had one review of the paper, Madam Chair, and it's a great document. We just need to figure out what is the best course moving forward to provide the best comprehensive management of the sea herring fishery. During our leadership call there was some conversation about the importance of, there is a number of things that the Commission does that are really important.

There is obviously a number of things that the Council does that are really important to herring management. We kind of need to figure out how to work together and comprehensively manage this species across the jurisdictions, and across the differing roles and responsibilities, and frankly abilities of each group as well. That's the update, and Madam Chair, happy to answer any questions if there are any.

CHAIR PATTERSON: Does the Board have any questions of Bob?

MS. KERNS: I don't see any hands.

ADJOURNMENT

CHAIR PATTERSON: Okay. This is going smoothly. Is there any other business?

MS. KERNS: No hands.

CHAIR PATTERSON: Well, with that being said. The meeting is adjourned.

(Whereupon the meeting adjourned at 9:24
a.m. on October 19, 2020.)



New England Fishery Management Council

FOR IMMEDIATE RELEASE
September 30, 2020

PRESS CONTACT: Janice Plante
(607) 592-4817, jlplante@nefmc.org

Atlantic Herring: Council Adopts 2021-2023 Specifications; Adjusts Herring Measures to Facilitate Mackerel Harvest

During the first day of its [September 29-October 1, 2020 webinar meeting](#), the New England Fishery Management Council took final action on Framework Adjustment 8 to the Atlantic Herring Fishery Management Plan. Next, the framework will be submitted to the National Marine Fisheries Service (NMFS/NOAA Fisheries) for review and final approval.

Framework 8 contains two parts:

- Specifications for the 2021-2023 fishing years for Atlantic herring; and
- Adjustments to measures in the herring plan that potentially inhibit the Atlantic mackerel fishery from achieving optimum yield (OY).

The Council based the 2021-2023 catch limits on the best scientific information available, which included:

1. Results from the [2020 Management Track Stock Assessment](#) for Atlantic herring;
2. Overfishing limit (OFL) and acceptable biological catch (ABC) [recommendations](#) from its Scientific and Statistical Committee (SSC), which followed the ABC control rule in [Amendment 8](#); and
3. Input from the Herring Plan Development Team.

The SSC initially considered a higher ABC for 2023 but ended up recommending that the Council maintain the 2022 ABC of

2021-2023 Atlantic Herring Specifications (in Metric Tons)			
Specification	2021	2022	2023
Overfishing Limit (OFL)	23,423	26,292	44,600
Acceptable Biological Catch (ABC)	9,483	8,767	8,767
Management Uncertainty	4,669	4,669	4,669
Optimum Yield / Annual Catch Limit (OY/ACL)	4,814*	4,098*	4,098*
Domestic Annual Harvest	4,814	4,098	4,098
Border Transfer	0	0	0
Domestic Annual Processing	4,814	4,098	4,098
U.S. At-Sea Processing	0	0	0
Area 1A Sub-ACL (28.9%)	1,391	1,184	1,184
Area 1B Sub-ACL (4.3%)	207	176	176
Area 2 Sub-ACL (27.8%)	1,338	1,139	1,139
Area 3 Sub-ACL (39%)	1,877	1,598	1,598
Fixed Gear Set-Aside	30	30	30
Research Set-Aside as % of Sub-ACLs	3%	0%	0%

* If the New Brunswick weir fishery catch through October 1 is less than the associated "trigger," then 1,000 mt of the management uncertainty buffer will be added to the Area 1A sub-ACL.



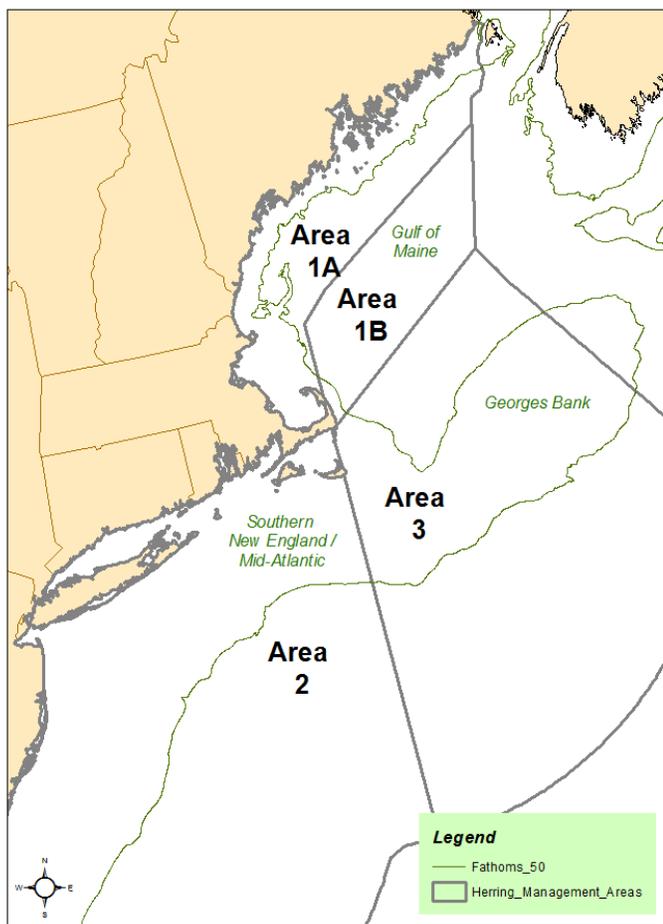
New England Fishery Management Council

8,767 metric tons (mt) in 2023 for this framework. The Council agreed to do so for two primary reasons:

- The lower ABC helps reduce scientific uncertainty, which the SSC deemed important, especially since the new assessment concluded that the resource is now overfished, even though overfishing is not occurring; and
- Both the SSC and Council viewed the 2023 ABC as a placeholder. A new management track assessment for herring is [scheduled for 2022](#), and the 2023 specifications will be updated based on the 2022 assessment results.

The Council takes into account management uncertainty when it sets specifications. While management uncertainty comes from several sources, the biggest one is the weir fishery in New Brunswick, Canada since the Council cannot control catches in that fishery. For the 2021-2023 specifications, the Council voted to set the management uncertainty buffer at 4,669 mt, which reflects the most recent 10-year catch totals from that New Brunswick fishery.

Given the low catch limits available to the U.S. fishery in the near future, the Council voted to set border



Atlantic Herring Management Areas 1A, 1B, 2, and 3. – NEFMC graphic

transfers at zero for the next three fishing years. Typically, the Council allocates a small percentage of fish to at-sea transfers from U.S. vessels to Canadian vessels, which buy herring from U.S. boats for the food-fish market. Border transfer activity has not occurred for the past several years, so the allocation has not been utilized since 2015.

While expressing strong support for the Atlantic Herring Research Set-Aside (RSA) Program, the Council determined that, given the current low quotas, 0% of the annual catch limit (ACL) should be reserved for the RSA program in 2022 and 2023. The Council approved a 3% set-aside for 2021 so that an ongoing project could be completed.

As a result of these decisions, the quotas for Herring Management Areas 1A, 1B, 2, and 3 flowed from there and are shown in the table on page 1.

CARRYOVER: Also related to catch limits, the Council agreed to allow 5% of unharvested catch from 2019 and/or 2020 from each management area – not 10% as would be allowed under “no action” – to automatically roll over to fishing years 2021 and/or 2022 respectively. The Council viewed this as a “balance” between addressing the



New England Fishery Management Council

needs of the fishery while maintaining protection of the resource. This balance was considered to be especially important in light of the current low biomass situation. The Council recognized that additional fish may be caught in one particular management area through the carryover allowance, but this also could lead to less fish being available in another area because the overall annual catch limit cannot be exceeded. Since near-term allocations for all areas will be extremely low, the Council determined that the 5% carryover was more appropriate than 10% and is expected to have lower risks of unintended distributional impacts on various segments of the fishery that access the resource in different areas and seasons.

RIVER HERRING/SHAD: The Council made no changes to the river herring and shad catch caps that currently apply to the Atlantic herring fishery.

Stock Status

Q: Why are herring quotas so low?

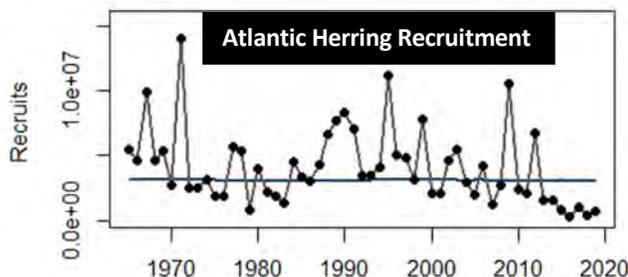
A: According to the new [management track stock assessment](#), the resource is at an extremely low level of spawning stock biomass (SSB). The Council is using a new ABC control rule to set catch limits. The control rule is applied to the estimate of SSB (see box at right). In 2020, the projection of SSB was 21% of the maximum sustainable yield (MSY) level for the herring resource. At this low level of biomass, the maximum fishing mortality rate (F) allowed is 24% of the fishing mortality rate estimated to produce MSY for the herring resource.

Q: What did the assessment peer review panel say?

A: The [peer review panel](#) said that trends in relative abundance of herring from all four surveys used in the assessment “indicate a substantial decline in stock abundance during the past few years.” The panel added, “Survey indices in 2019 were at or near record-low values.”

Q: Did the assessment show any signs of recent, improved recruitment?

A: No. Fishery and survey data have not yet detected improved recruitment, which has been at record low levels for the past seven years as seen in this graphic.



What Does the ABC Control Rule Do?

The Council adopted an ABC control rule for Atlantic herring as part of [Amendment 8](#) to better account for herring’s important role as a forage species. The amendment is under review by NOAA Fisheries. This relatively new control rule was used to develop the ABC recommendations for 2021-2023 and 2019-2021.

The control rule is biomass based. When biomass is greater than 50% of SSB at MSY, the maximum fishing mortality rate can be up to 80% of F at MSY. When biomass falls below 50% of SSB at MSY, then the allowable fishing mortality rate declines linearly. When SSB falls to 10% of SSB at MSY or lower, fishing mortality is set at zero, which means the ABC is zero.



New England Fishery Management Council

MACKEREL-RELATED ACTIONS: The Council voted to adjust two measures in the Atlantic herring plan that potentially inhibit mackerel fishermen from being able to more fully utilize the mackerel quota.

- The Council voted to adjust the current 2,000-pound incidental possession limit of herring in the mackerel fishery in Herring Management Areas 2 and 3 as follows:
 - When 90% of each area’s sub-ACL is reached, the mackerel fishery’s incidental catch limit of Atlantic herring would be limited to 40,000 pounds;
 - When 98% of each herring management area’s sub-ACL is reached, the incidental catch limit of Atlantic herring would be 2,000 pounds; and
 - If the total ACL for the herring fishery is reached at 95%, then the incidental “backstop” catch limit for the mackerel fishery would be 2,000 pounds.
- In Area 1B, which currently is subject to a seasonal closure from January through April, the Council voted to eliminate the closure to potentially allow directed mackerel harvests during the early winter months when mackerel typically are present in the area.

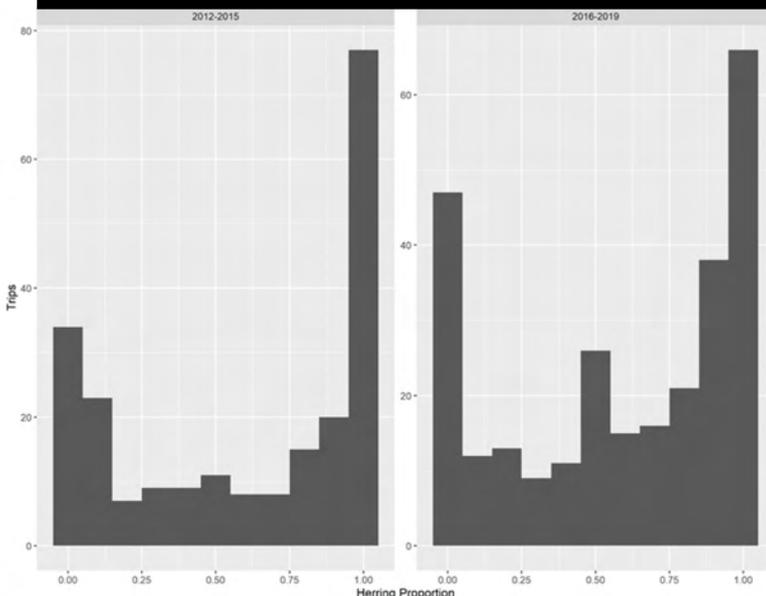


Mackerel and herring often intermix, and many of the region’s midwater trawlers target both species. When the incidental possession limit for Atlantic herring is 2,000 pounds, vessels generally find it challenging to fish for and target mackerel in certain areas and seasons when both species are present. Framework 8 to the herring plan includes two measures to help the mackerel fishery potentially better utilize its available quota.



– NOAA Fisheries graphics

Proportion of Herring Landed on Midwater Trawl Trips With > 1 Pound of Atlantic Mackerel: 2012-2015 Versus 2016-2019



What are These Bar Graphs Showing: The proportion of herring on midwater trawl trips landing mackerel has varied over time. The number of trips where midwater trawl vessels landed *primarily mackerel* are shown on the left side of each bar graph, while the trips where midwater trawlers landed *primarily herring* are depicted on the right side of each graph. The bars in the middle depict trips where mackerel and herring were intermixed.

Questions? Contact Deirdre Boelke, the Council’s Atlantic herring plan coordinator, at (978) 465-0492, ext. 105, email dboelke@nefmc.org.

- All herring documents and the presentation used during this meeting are available at [NEFMC September 29, 2020 Atlantic Herring Discussion](#).

SUMMARY: Pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015, this final rule provides the 2021 adjustment to the civil penalties that the agency may assess against a person for violating certain NTSB statutes and regulations.

DATES: This final rule is effective on January 11, 2021.

ADDRESSES: A copy of this final rule, published in the **Federal Register (FR)**, is available at <http://www.regulations.gov> (Docket ID Number NTSB–2021–0001).

FOR FURTHER INFORMATION CONTACT: Kathleen Silbaugh, General Counsel, (202) 314–6080 or rulemaking@ntsb.gov.

SUPPLEMENTARY INFORMATION:

I. Background

The Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (the 2015 Act) requires, in pertinent part, agencies to make an annual adjustment for inflation by January 15th every year. OMB, M–16–06, *Implementation of the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015* (Feb. 24, 2016). The Office of Management and Budget (OMB) annually publishes guidance on the adjustment multiplier to assist agencies in calculating the mandatory annual adjustments for inflation.

The NTSB’s most recent adjustment was for fiscal year (FY) 2020, allowing the agency to impose a civil penalty up to \$1,722, effective January 15, 2020, on a person who violates 49 U.S.C. 1132 (Civil aircraft accident investigations), 1134(b) (Inspection, testing, preservation, and moving of aircraft and parts), 1134(f)(1) (Autopsies), or 1136(g) (Prohibited actions when providing assistance to families of passengers involved in aircraft accidents). Civil Monetary Penalty Annual Inflation Adjustment, 85 FR 2319 (Jan. 15, 2020).

OMB has since published updated guidance for FY 2021. OMB, M–21–10, *Implementation of Penalty Inflation Adjustments for 2021, Pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015* (Dec. 23, 2020). Accordingly, this final rule reflects the NTSB’s 2021 annual inflation adjustment and updates the maximum civil penalty from \$1,722 to \$1,742.

II. The 2021 Annual Adjustment

The 2021 annual adjustment is calculated by multiplying the applicable maximum civil penalty amount by the cost-of-living adjustment multiplier, which is based on the Consumer Price Index and rounding to the nearest

dollar. OMB, M–21–10, *Implementation of Penalty Inflation Adjustments for 2021, Pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015* (Dec. 23, 2020). For FY 2021, OMB’s guidance states that the cost-of-living adjustment multiplier is 1.01182.

Accordingly, multiplying the current penalty of \$1,722 by 1.01182 equals \$1,742.35, which rounded to the nearest dollar equals \$1,742. This updated maximum penalty for the upcoming fiscal year applies only to civil penalties assessed after the effective date of the final rule. The next civil penalty adjustment for inflation will be calculated by January 15, 2022.

III. Regulatory Analysis

The Office of Information and Regulatory Affairs Administrator has determined agency regulations that exclusively implement the annual adjustment are consistent with OMB’s annual guidance, and have an annual impact of less than \$100 million are generally not significant regulatory actions under Executive Order (E.O.) 12866. OMB, M–21–10, *Implementation of Penalty Inflation Adjustments for 2021, Pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015* (Dec. 23, 2020). An assessment of its potential costs and benefits under E.O. 12866, *Regulatory Planning and Review* and E.O. 13563, *Improving Regulation and Regulatory Review* is not required because this final rule is not a “significant regulatory action.” Likewise, this rule does not require analyses under the Unfunded Mandates Reform Act of 1995 and E.O. 13771, *Reducing Regulation and Controlling Regulatory Costs* because this final rule is nonsignificant.

The NTSB does not anticipate this rule will have a substantial direct effect on state government or will preempt state law. Accordingly, this rule does not have implications for federalism under E.O. 13132, *Federalism*.

The NTSB also evaluated this rule under E.O. 13175, *Consultation and Coordination with Indian Tribal Governments*. The agency has concluded that this final rule will not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.

The Paperwork Reduction Act of 1995 is inapplicable because the final rule imposes no new information reporting or recordkeeping necessitating clearance by OMB.

The Regulatory Flexibility Act of 1980 does not apply because, as a final rule, this action is not subject to prior notice and comment. *See* 5 U.S.C. 604(a).

The NTSB has concluded that this final rule neither violates nor requires further consideration under the aforementioned Executive orders and Acts.

List of Subjects in 49 CFR Part 831

Aircraft accidents, Aircraft incidents, Aviation safety, Hazardous materials transportation, Highway safety, Investigations, Marine safety, Pipeline safety, Railroad safety.

Accordingly, for the reasons stated in the preamble, the NTSB amends 49 CFR part 831 as follows:

PART 831—INVESTIGATION PROCEDURES

■ 1. The authority citation for part 831 continues to read as follows:

Authority: 49 U.S.C. 1113(f).
 Section 831.15 also issued under Pub. L. 101–410, 104 Stat. 890, amended by Pub. L. 114–74, sec. 701, 129 Stat. 584 (28 U.S.C. 2461 note).

§ 831.15 [Amended]

■ 2. Amend § 831.15 by removing the dollar amount “\$1,722” and adding in its place “\$1,742”.

Robert L. Sumwalt III,
Chairman.

[FR Doc. 2021–00060 Filed 1–8–21; 8:45 am]

BILLING CODE 7533–01–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 648

[Docket No. 221228–0362]

RIN 0648–BI80

Magnuson-Stevens Fishery Conservation and Management Act Provisions; Fisheries of the Northeastern United States; Amendment 8

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule.

SUMMARY: This rule implements Amendment 8 to the Atlantic Herring Fishery Management Plan. This amendment specifies a long-term acceptable biological catch control rule for herring and addresses localized

depletion and user group conflict. It also establishes an acceptable biological catch control rule that accounts for herring's role in the ecosystem and prohibits midwater trawling in inshore federal waters from the U.S./Canada border to the Rhode Island/Connecticut border. Amendment 8 supports sustainable management of the herring resource and seeks to ensure that herring is available to minimize possible detrimental biological impacts on predators of herring and associated socioeconomic impacts on other user groups.

DATES: Effective February 10, 2021.

ADDRESSES: Copies of Amendment 8, including the Environmental Impact Statement, the Regulatory Impact Review, and the Initial Regulatory Flexibility Analysis (EIS/RIR/IRFA) prepared in support of this action are available from Thomas A. Nies, Executive Director, New England Fishery Management Council, 50 Water Street, Mill 2, Newburyport, MA 01950. The supporting documents are also accessible via the internet at: <http://www.nefmc.org>.

FOR FURTHER INFORMATION CONTACT: Carrie Nordeen, Fishery Policy Analyst, phone: (978) 282-9272 or email: Carrie.Nordeen@noaa.gov.

SUPPLEMENTARY INFORMATION:

Background

The goal of the Atlantic Herring Fishery Management Plan (FMP) is to manage the herring fishery at long-term sustainable levels, and objectives of the FMP include providing for full utilization of the optimum yield (OY) and, to the extent practicable, controlled opportunities for participants in other New England and Mid-Atlantic fisheries. Consistent with the Magnuson-Stevens Fishery Conservation and Management Act definition of OY, the Herring FMP describes OY as the amount of fish that will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities, taking into account the protection of marine ecosystems, including maintenance of a biomass that supports the ocean ecosystem, predator consumption of herring, and biologically sustainable human harvest. The Magnuson-Stevens Act further provides that OY is the maximum sustainable yield (MSY) from the fishery as reduced by any relevant economic, social, or ecological factor. In the Herring FMP, this includes recognition of the importance of herring as forage for fish, marine mammals, and birds in the Greater Atlantic Region. Consistent

with these aims, the goals for Amendment 8 are to: (1) Account for the role of herring within the ecosystem, including its role as forage; (2) stabilize the fishery at a level designed to achieve OY; and (3) address localized depletion in inshore waters.

An acceptable biological catch (ABC) control rule is a formulaic approach for setting a harvest limit that reflects the FMP's harvest policy. For herring and other stocks with a defined overfishing limit (OFL), the ABC is reduced from the OFL to account for an estimate of scientific uncertainty, such as uncertainty around stock size estimates, variability around estimates of recruitment, and consideration of ecosystem issues, so that the OFL will not be exceeded. The ABC control rule is developed by the Council to reflect its risk tolerance for not exceeding the OFL and provides guidance to the Council's Scientific and Statistical Committee for recommending annual ABCs based on the best available scientific information about stock status. The specific parameters of an ABC control rule are: (1) Upper biomass parameter; (2) maximum allowable fishing mortality rate (F); and (3) lower biomass parameter. The values assigned to each of these parameters dictate the overall "shape" or function of the ABC control rule and determine whether F increases or decreases in response to the current estimate of stock biomass.

On August 21, 2015 (80 FR 50825), the Council published a supplemental notice of intent (NOI) announcing it was expanding the scope of Amendment 8 beyond an ABC control rule to consider localized depletion in inshore waters. Public comment during the supplemental scoping made it clear that localized depletion concerns voiced by many stakeholders included the biological impacts of herring removals on the herring stock and on predators of herring. Public comment also indicated that impacts of localized depletion should be measured and evaluated relative to competing uses for the herring resource and potentially negative economic impacts on businesses that rely on predators of herring. Therefore, the Council's consideration of localized depletion in Amendment 8 included user group conflict, both an evaluation of impacts of the user group conflict and consideration of competing interests for how herring should be used.

Amendment 8 was adopted by the Council on September 25, 2018. We published a notice of availability (NOA) for the amendment in the **Federal Register** on August 21, 2019 (84 FR 43573), with a comment period ending

October 21, 2019. We published a proposed rule for the amendment in the **Federal Register** on October 9, 2019 (84 FR 54094), with a comment period ending November 25, 2019. After considering public comment, we approved Amendment 8, on behalf of the Secretary of Commerce, on November 19, 2019, and notified the Council of the amendment's approval in a letter dated that same day. This final rule implements Amendment 8 as approved. Because details of the Council's development of the measures in Amendment 8 were described in the NOA and proposed rule, they are not repeated here.

Approved Measures

The Magnuson-Stevens Act allows us to approve, partially approve, or disapprove measures recommended by the Council in an amendment based on whether the measures are consistent with the fishery management plan, plan amendment, the Magnuson-Stevens Act and its National Standards, and other applicable law. After reviewing public comment, we approved all the proposed measures in Amendment 8, as recommended by the Council. While the majority of public comment supported the implementation of Amendment 8, we also received public comment urging us to disapprove the amendment. Ultimately, we approved the proposed measures in Amendment 8 because we determined the measures were consistent with the Magnuson-Stevens Act and other applicable law. Comments that opposed the implementation of Amendment 8 did not sufficiently demonstrate that the ABC control rule or inshore midwater trawl restricted area were inconsistent with the Magnuson-Stevens Act or other applicable law.

ABC Control Rule

This rule establishes a long-term ABC control rule for herring. Under the control rule, when biomass (B) is at or above 50 percent of B_{MSY} or its proxy, ABC is the catch associated with an F of 80 percent of F_{MSY} or its proxy. When biomass falls below 50 percent of B_{MSY} or its proxy, F declines linearly to 0 at 10 percent of B_{MSY} or its proxy. The control rule sets ABC for a 3-year period, but allows ABC to vary year-to-year in response to projected changes in biomass. This rule specifies that the control rule can be revised via a framework adjustment if a quantitative assessment is not available, if projections are producing ABCs that are not justified or consistent with available information, or if the stock requires a rebuilding program.

The control rule explicitly accounts for herring as forage in the ecosystem by limiting F to 80 percent of F_{MSY} when biomass is high and setting it at zero when biomass is low. It also generates an ABC consistent with specific criteria identified by the Council, including low variation in yield, low probability of the stock becoming overfished, low probability of a fishery shutdown, and catch limits set at a relatively high proportion of MSY . This control rule is intended to result in low variation in yield, low probability of a fishery shutdown, and low probability of overfishing. As a result, the Council anticipates that short-term negative economic impacts on participants in the herring or lobster fisheries, resulting from a reduced herring harvest in response to low herring biomass, may become a long-term economic benefit for industry participants. Relative to other control rules considered by the Council in Amendment 8, this control rule is designed to more effectively balance the goal and objectives of the Herring FMP, including managing the fishery at long-term sustainable levels, taking forage for predators into account to support the ocean ecosystem, and providing a biologically sustainable

harvest as a source of revenue for fishing communities and bait for the lobster fishery.

Shortly before the Council took final action on Amendment 8, the 2018 stock assessment concluded that herring biomass was low, and the probability of overfishing and the stock becoming overfished was high. While not directly applicable to a long-term harvest policy, the Council noted that under herring's current condition of low biomass, setting catch more conservatively than status quo may increase the likelihood of stock growth and, in turn, have positive impacts on the herring fishery, predators, and predator fisheries.

In August 2020, the report for the 2020 herring stock assessment determined the stock is overfished, but not subject to overfishing. Spawning stock biomass (SSB) is estimated to have declined since 2014, and the 2019 SSB was estimated at 29 percent (77,883 metric tons (mt)) of the SSB necessary to support MSY (269,000 mt) resulting in a determination of overfished. F for herring harvested by mobile gear (*i.e.*, midwater trawl, purse seine, bottom trawl) has declined since 2010, was estimated to be 0.25 in 2019, and is well below the overfishing threshold (0.54) so the stock is not experiencing

overfishing. Recruitment continues to be at historic lows, and in 2019 it was estimated at about 20 percent of median recruitment. On October 13, 2020, we notified the Council that the herring stock is overfished and requested it develop rebuilding measures.

Inshore Midwater Trawl Restricted Area

This rule prohibits the use of midwater trawl gear inshore of 12 nautical miles (22 km) from the U.S./Canada border to the Rhode Island/Connecticut border and inshore of 20 nautical miles (37 km) off the east coast of Cape Cod. Specifically, federally permitted vessels are prohibited from using, deploying, or fishing with midwater trawl gear within the inshore midwater trawl restricted area located shoreward of the 12-nautical mile (22-km) territorial sea boundary from Canada to Connecticut and within 30-minute squares 114 and 99 off Cape Cod (Figure 1). Midwater trawl vessels are able to transit the inshore midwater trawl restricted gear area provided gear is stowed and not available for immediate use. This measure is in addition to the existing prohibition on midwater trawling for herring in Area 1A during June 1 through September 30.

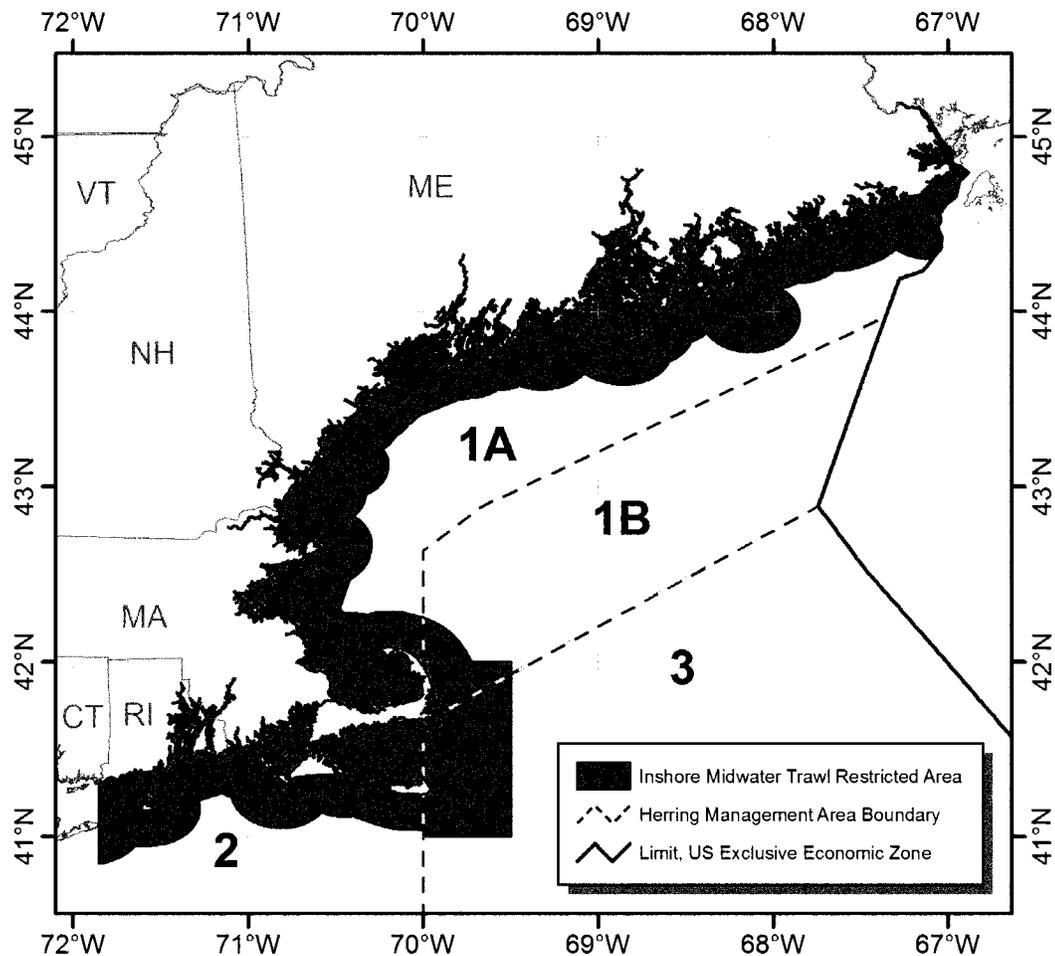


Figure 1 -- Inshore Midwater Trawl Restricted Area

The Council recommended the inshore midwater trawl restricted area to minimize local depletion and its associated user group conflict when midwater trawl vessels harvesting herring overlap with other user groups (*i.e.*, commercial fisheries, recreational fisheries, ecotourism) that rely on herring as forage and provide inshore conservation benefits. The Council focused this measure on vessels using midwater trawl gear to mitigate potential negative socioeconomic impacts on other user groups in response to short-duration, high-volume herring removals by midwater trawl gear and because midwater trawl vessels are relatively more mobile and capable of fishing in offshore areas than vessels using other gear types. Information to quantify the impact of midwater trawling on other user groups is scarce, so the amendment analyzed the degree of overlap between midwater trawl vessels and other user groups. The

inshore midwater trawl restricted area incorporates areas with a high degree of overlap between midwater trawl vessels and other user groups throughout the year. Specifically, it incorporates the overlap with predator fisheries in the Gulf of Maine and southern New England throughout the year, as well as the overlap with ecotourism and the tuna fishery in Area 1A during the fall. While overlap with the midwater trawl vessels does not necessarily translate into direct negative biological impacts on predators, less overlap may reduce potential user conflicts, provided midwater trawl effort does not shift into other areas and generate additional overlap.

The Herring FMP specifies that herring research set-aside (RSA) can equal up to 3 percent of the sub-annual catch limit for a herring management area. This rule permits RSA compensation fishing using midwater trawl gear within the inshore midwater

trawl restricted area. The Council recommended allowing RSA compensation fishing within the inshore midwater trawl restricted area to help ensure the RSA would be harvested and those funds would be available to support the projects awarded RSA. Vessels engaged in herring RSA compensation fishing typically operate as authorized by an exempted fishing permit (EFP) so they can request exemptions from certain regulations that would otherwise restrict herring harvest. While vessels are permitted to use midwater trawl gear within the inshore midwater trawl restricted area while RSA compensation fishing, it does not mean that compensations trips would be without restrictions. Terms and conditions of the EFP must be consistent with the Magnuson-Stevens Act, other applicable law, and the Herring FMP. Additionally, we would consider whether additional terms and conditions would be required for EFPs

to ensure RSA compensation trips do not exacerbate the overlap between midwater trawl vessels and other user groups, consistent with the Herring FMP.

This rule specifies that the inshore midwater trawl restricted area or new closures to address localized depletion and/or user group conflict may be modified or implemented via framework adjustment. The list of framework provisions at § 648.206 already includes closed areas; this amendment adds the inshore midwater trawl restricted area to that list.

The Council's recommendation to prohibit midwater trawling in inshore areas is an allocation decision intended to balance the needs of user groups and provide conservation benefits.

Consistent with objectives in the Herring FMP, the inshore midwater trawl restricted area is intended to facilitate an efficient, fair, and equitable accommodation of relevant social, economic, and ecological factors associated with achieving OY, in part by providing, to the extent practicable, controlled opportunities for participants in other New England and Mid-Atlantic fisheries. Because midwater trawl vessels historically harvested a larger percentage of herring than other gear types and are able to fish offshore, the Council recommended prohibiting them from inshore waters to help ensure herring was available inshore for other user groups and predators of herring. The inshore midwater trawl restricted area is designed to be reasonably large enough to address the overlap between midwater trawl vessels and other user groups and, ultimately, user group conflict in inshore waters while still providing midwater trawl vessels access to areas with fishing opportunities. This measure is likely to negatively impact the midwater trawl fleet, with potentially increased trip costs and lower annual catches, but on balance, the benefits to other user groups, such as potentially reduced trips costs, higher annual catches, and improved safety, outweigh the costs to midwater trawl vessels. The measure may also have biological benefits if moving midwater trawl vessels offshore minimizes catch of river herring and shad, reduces fishing pressure on the inshore component of the herring stock, and helps ensure herring are available to predators. Herring is currently assessed as one stock, but it likely has stock components. Reducing fishing pressure inshore would benefit an inshore stock component. Analyses in Amendment 8 estimate that in recent years approximately 30 percent of the midwater trawl fleet's annualized

revenue came from within the inshore midwater trawl restricted area. Negative economic impacts on the midwater trawl fleet may be mitigated if the fleet is able to offset lost revenue from inshore areas with increased revenue from offshore areas. Herring catch limits are currently low, so the fishery has the capacity to harvest the OY. Recent midwater trawl landings (2007–2015) offshore of the inshore midwater trawl restricted area (19,302 mt) are higher than the OY for 2020 and 2021 (11,621 mt). In the longer term, the fishery will likely adapt to be able to harvest an increased OY, provided vessels are able to locate herring.

Clarifications

This rule establishes the following revision and clarifications to § 648.202(a) under the authority of section 305(d) to the Magnuson-Stevens Act, which provides that the Secretary of Commerce may promulgate regulations necessary to carry out an FMP or the Magnuson-Stevens Act.

First, this rule revises the title from "Purse Seine/Fixed Gear Only Area" to "Midwater Trawl Restricted Area." Bottom trawl gear, in addition to purse seine and fixed gear, is permitted in the referenced area; only midwater trawl gear is prohibited in the area. This revision is a more accurate description of the referenced area and is necessary to clarify the intent of the regulation.

Second, this rule clarifies that the regulation applies only to all federally permitted vessels fishing for herring. The regulation currently applies midwater trawl gear restrictions to vessels fishing for herring. This clarification is necessary to specify that restrictions on fishing for herring with midwater trawl gear only apply to federally permitted vessels and do not apply to vessels with only a state herring permit fishing exclusively in state waters.

Third, the rule clarifies the conditions under which midwater trawl vessels may transit the "Midwater Trawl Restricted Area" described above. Current regulations specify that midwater trawl vessels with a limited access herring permit may transit Area 1A during June through September with midwater trawl gear on board, provided the gear is stowed and not available for immediate use. This rule clarifies that any federally permitted herring vessel may transit Area 1A during June through September, provided midwater trawl gear is stowed and not available for immediate use. The unnecessary addition of a limited access permit requirement to transit Area 1A was likely a byproduct of the impact

analysis identifying the number of limited access vessels that would be affected by the prohibition of midwater trawling in Area 1A implemented in Amendment 1 to the Herring FMP.

This rule also revises § 648.200(b)(3) under the authority of section 305(d) to the Magnuson-Stevens Act. This revision changes the reference from "at" § 648.201(a) to "in" § 648.201(a) to be consistent with other regulatory references within § 648.200.

Revisions and Additional Clarifications to the Proposed Rule

This rule implements necessary minor administrative changes under section 305(d) to the Magnuson-Stevens Act that were not described in the proposed rule. First, it corrects definitions in § 648.2. The definition for *slippage in the Atlantic herring fishery* was inadvertently removed from the regulations, and this rule restores it. This rule also moves the definition for *observer or monitor* to the correct alphabetic order.

Second, this rule corrects several weblinks in regulations describing monitoring coverage (§ 648.11). The Northeast Fisheries Science Center's Fishery Sampling Branch's website was recently revised and, as a result, several weblinks to monitoring resources specified in the final rule implementing the New England Industry-Funded Monitoring (IFM) Omnibus Amendment (85 FR 7414; February 7, 2020) are now outdated. This rule corrects those outdated weblinks.

Third, this rule corrects minor typographical errors in § 648.11 that were implemented in the final rule for the IFM Amendment.

Comments and Responses

We received 268 comment letters on the NOA and proposed rule: 160 from the general public; 38 from members of the fishing industry; 29 from members of the herring fishery; 19 from members of the recreational and charter party fisheries; 13 from environmental advocacy groups; and 9 from state or town governments. Of the 268 letters, a letter from the Pew Charitable Trusts (Pew) included 8,942 signatures, a letter from the Conservation Law Foundation (CLF) included 553 comments from the public, a letter from the National Audubon Society (NAS) included 3,970 signatures and 201 comments from the public, and a letter from Saving Seafood included 22 comments from members of the fishing industry.

Development of this amendment was contentious because stakeholders are polarized on the inshore midwater trawling prohibition to minimize user

group conflict and, to a lesser extent, on the ABC control rule. Most of the commenters support the implementation of Amendment 8, including all state and town governments, all environmental advocacy groups, most recreational and charter party fisheries members, most of the general public, and some fishing industry members. Those commenters who do not support the implementation of Amendment 8 include most herring industry members, some fishing industry members, and some of the general public.

Comment 1: Some members of the herring industry assert that Amendment 8 is inconsistent with the Magnuson-Stevens Act, its National Standards, and the Herring FMP. They propose that current management measures, such as slippage consequence measures, coverage requirements, the seasonal prohibition on midwater trawling for herring in Area 1A, and catch caps, are more than sufficient to manage catch in the herring fishery. They caution that the cumulative impact of prohibiting midwater trawling inshore, low catch under the new ABC control rule, and existing restrictions was not fully analyzed in the final EIS (FEIS). They believe these cumulative restrictions threaten the loss of a year-round fishery, jeopardize continued participation in the fishery by harvesters and fishing communities, and negatively impact the bait supply for the lobster fishery.

Response: The Herring FMP is intended to provide, in part, controlled opportunities for participants in other New England and Mid-Atlantic fisheries. The inshore midwater trawl restricted area was developed to address issues of localized depletion and its associated user group conflict as described in the amendment's user group conflict problem statement. It is designed to support inshore fishing opportunities for a wide variety of fishing industry participants. The ABC control rule is designed to provide a long-term sustainable herring fishery and, similar to the inshore midwater trawl restricted area, the ABC control rule supports herring as forage for predators and other user groups. While measures such as slippage consequence measures, coverage requirements, and catch caps help manage herring catch, they were not developed explicitly to support opportunities for other user groups.

Herring are an important forage species in the Northeast U.S. shelf ecosystem and they are eaten by a wide variety of fish, marine mammals, and birds. Herring share the role of forage with other prey species (e.g., sandlance,

mackerels, squids, and hakes); the relative importance of herring as forage varies by predator and depends on whether other forage is available. Herring are important forage for Atlantic bluefin tuna, spiny dogfish, Atlantic cod, silver hake, and Atlantic striped bass, as well as seabirds (e.g., Atlantic puffins and terns) and marine mammals (e.g., baleen whales, toothed whales, and pinnipeds).

The amendment's FEIS analyzed the ecological and socioeconomic impacts of management measures on the herring fishery, the Atlantic mackerel fishery, and the lobster fishery, as well as predator fisheries and ecotourism. The FEIS also considered the impacts of these measures in concert with past, present, and reasonably foreseeable future actions. The FEIS concludes that short-term negative economic impacts on some fishery participants have the potential to become long-term economic benefits for all user groups. Negative impacts may be minimized for midwater trawl vessels if they are able to harvest herring offshore, other economical sources of bait are available for the lobster fishery, or the ABC control rule helps minimize the risk of the herring stock becoming overfished and subject to overfishing. The Council's consideration included the ecological and socioeconomic impacts of measures in Amendment 8, and recommended these measures to help ensure herring was available for predators and all user groups.

Section 6.1.1 of the FEIS describes how management measures are consistent with the Magnuson-Stevens Act and its National Standards. We determined these measures are consistent with the Magnuson-Stevens Act and its National Standards when we approved the amendment in November 2019. Our consideration of how measures are consistent with specific National Standards is further detailed in our responses to comments below.

Inshore Midwater Trawl Restricted Area

Comment 2: Commenters support implementation of the inshore midwater trawl restricted area because they believe it will:

- Protect Atlantic herring and river herring from localized inshore depletion by industrial-scale fishing;
- Reduce user group conflict and support coastal economies and commercial and recreational business that rely on predators;
- Balance the needs of all stakeholders in inshore waters where stakeholder overlap is the greatest, without setting a precedent for prohibiting other types of trawling;

- Recognize the importance of herring to inshore users, including striped bass, tuna, and cod fisheries, as well as ecotourism by helping maintain a large forage biomass for predators and those predator fisheries (e.g., striped bass, tuna, recreational and charter fisheries);

- Protect inshore waters from the impacts of midwater trawling and provide consistency with other countries that restrict midwater trawling;
- Decrease discarded catch of cod and haddock by midwater trawlers in inshore waters;
- Offer additional ecosystem protection to Stellwagen Bank;
- Protect discreet, localized aggregations of herring, as well as the ecosystem and coastal communities that rely on them; and
- Protect herring spawning areas, including spawning adults and eggs, especially off Cape Cod, to support recruitment.

A joint letter from CLF, NAS, Natural Resources Defense Council (NRDC), Pew, and Wild Oceans supports implementation of the inshore midwater trawl restricted area. The commenters explain the measure would reduce fishing pressure inshore, where predators need herring, and mitigate negative socioeconomic impacts of high-volume herring removals on other user groups. The commenters believe the inshore midwater trawl restricted area will have biological, ecological, and economic benefits and that it is consistent with the Magnuson-Stevens Act and National Standards.

The New England Purse Seiner's Alliance (NEPSA) supports the inshore midwater trawl restricted area because it believes the existing prohibition on midwater trawling in Area 1A during the summer helps protect herring and allows for a robust tuna fishery. NEPSA also asserts the prohibition clearly addresses the goals, objectives, and problem statement for the amendment and is consistent with the Magnuson-Stevens Act.

The Commonwealth of Massachusetts supports the inshore midwater trawl restricted area because it minimizes possible detrimental biological impacts on predators and associated socioeconomic impacts on other user groups that rely on herring as forage. It also supports using the overlap of midwater trawl activity and other user groups as the best available science to support prohibiting inshore midwater trawling.

The Nature Conservancy (TNC) commented that localized depletion, or taking fish faster than they can be replaced in a given area, is a significant

biological concern for the herring resource, the predatory fish and birds that rely on herring as food, and other user groups that depend on the local availability of herring to support their business. TNC recognizes there is limited information linking localized depletion to the midwater trawl fishery, but it supports the Council's precautionary approach to address localized depletion and notes the inshore midwater trawl restricted area encompasses times and areas with a high degree of overlap between the midwater trawl fishery and other user groups.

While Lund's Fisheries generally opposes the inshore midwater trawl restricted area, it supports allowing midwater trawl RSA compensation fishing within the inshore midwater trawl restricted area to support fishery access to herring and mackerel.

Response: We acknowledge the commenters support for the inshore midwater trawl restricted area and concur that the measure is intended to ensure herring is available to minimize detrimental biological impacts on predators of herring and associated socioeconomic impacts on other user groups.

Comment 3: Several commenters support the inshore midwater trawl restricted area, but would prefer that the midwater trawl restricted area extend further offshore, either 25 (46 km) or 50 (93 km) nautical miles offshore, especially on Stellwagen Bank.

Response: We can only approve, disapprove, or partially approve Council-recommended measures; we cannot modify the inshore midwater trawl restricted area to extend further offshore. The Council considered alternatives that would have extended the midwater trawl restricted area further offshore but recommended a smaller inshore midwater trawl restricted area, so that the costs associated with the measure are commensurate with the benefits.

Comment 4: Some members of the herring industry assert the inshore midwater trawl restricted area is not consistent with the Magnuson-Stevens Act and applicable law for the following reasons:

- It will prevent the herring and mackerel fisheries from achieving OY on a short-term and continuing basis and will not result in a net benefit to the Nation (National Standard 1);
- The best available science does not indicate localized depletion, nor does it find a difference in fishery removals by midwater trawl vessels compared to purse seine vessels, and this measure makes no attempt to align the restricted

area with associated analyses and is an illegitimate political compromise (National Standard 2);

- The allocation of fishing grounds is not fair or equitable and does not promote conservation (National Standard 4);
- It will impose economic inefficiencies on midwater trawl vessels, including longer, more expensive fishing trips, and no measure may have economic allocation as its sole purpose (National Standard 5);
- The benefits of restricting midwater trawling inshore do not outweigh the costs (National Standard 7);
- Restricting midwater trawling in inshore waters had no conservation benefit and does not minimize economic impacts (National Standard 8);
- Moving midwater trawl vessels offshore makes fishing trips potentially less safe (National Standard 10);
- Prohibiting midwater trawling inshore is arbitrary and capricious; and
- The amendment does not include a fishery impact statement or cumulative effects assessment.

Response: We disagree with these comments. The Council's development of the amendment considered the best available science to determine how best to achieve OY in this fishery, given this fishery's multiple commercial, recreational, and ecological interests. The inshore midwater trawl restricted area fairly and equitably allocates fishing opportunities to a wide variety of fishing industry participants in a manner that reasonably promotes conservation. The Council's consideration included a robust analysis and consideration of economic impacts on fishing communities, including recreational fishing, an efficient use of resources, and attempts to minimize costs and unnecessary duplication. Further, the Council weighed the costs and benefits of this measure on the various user groups and considered the effect of the measure on the safety of the fisheries participants.

The herring fishery is capable of achieving OY, both in the short term and on a continuing basis, with inshore harvest from purse seine and bottom trawl vessels and offshore harvest from midwater trawl vessels, consistent with National Standard 1. In the short term, herring catch limits are expected to remain very low (less than 10,000 mt), as the stock is experiencing historically low recruitment. If herring are available, the fishery has the capacity and opportunity to harvest the entire OY. In the longer term, the fishery will likely adapt to be able to harvest an increased OY, provided vessels are able to locate

herring. While recent herring catches have largely come from within the inshore midwater trawl restricted area, midwater trawl vessels have historically caught the majority of their harvest offshore. Any inability to harvest the OY is more likely related to herring's reduced abundance, rather than the lack of inshore midwater trawling curtailing the fishery's capacity to harvest herring. Regarding the mackerel fishery, we do not expect the inshore midwater trawl restricted area to prevent the mackerel fishery from achieving OY because only 14 percent (925 mt) of recent mackerel midwater trawl landings (2007–2015) were harvested from within the restricted area.

The Magnuson-Stevens Act defines OY as the amount of fish that provides the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities. It also prescribes OY on the basis of the fishery's MSY, as reduced by relevant economic, social, or ecological factors. The Herring FMP's OY definition further requires, "taking into account the protection of marine ecosystems, including maintenance of a biomass that supports the ocean ecosystem, predator consumption of herring, and biologically sustainable human harvest. This includes recognition of the importance of Atlantic herring as one of many forage species of fish, marine mammals, and birds in the Northeast Region." Relevant to the economic and social factors that apply to herring management are the impacts on the fisheries for predator fisheries (e.g., groundfish, bluefin tuna, striped bass) and on ecotourism (e.g., whale watching). Consistent with National Standard 1, the inshore midwater trawl restricted area helps limit concentrated removals of herring in inshore areas to acknowledge the importance of herring as forage in the ecosystem, support the businesses that depend on predators of herring, and provide the greatest overall benefit to the Nation.

The inshore midwater trawl restricted area was developed in response to the amendment's problem statement and is designed to help minimize user group conflict between midwater trawl vessels and other user groups. The Council's consideration of localized depletion ultimately included user group conflict to address stakeholders' concerns with localized depletion issues. The Council evaluated the impact of user group conflict and competing interests for how herring should be used. Consistent with National Standards 2 and 4, the inshore midwater trawl restricted area allocates fishing opportunities to a wide variety

of user groups in a manner that promotes the conservation of herring for predators and is based on the best available science. The FEIS summarizes what is known about the role of herring as forage in the ecosystem, includes maps describing the footprint of the herring fishery as well as key predator fisheries, and analyzes the overlap between these fisheries to identify seasons and areas with the potential for user group conflict. The FEIS suggests the greatest amount of overlap between user groups occurs inshore throughout the year. Because midwater trawl vessels are more capable of fishing offshore than other user groups, the Council recommended prohibiting them from inshore waters to help ensure herring are available inshore for other users groups and predators of herring. The inshore midwater trawl restricted area has biological benefits if moving the midwater trawl fleet offshore minimizes catch of river herring and shad, reduces fishing pressure on the inshore component of the herring stock, and helps ensure herring are available to predators. For these reasons, the FEIS describes the inshore midwater trawl restricted area as a fair compromise that balances the competing needs of user groups.

This measure is likely to negatively impact the midwater trawl fleet, with potentially increased trip costs and, if less herring is available offshore, lower annual catches. The FEIS considers that some midwater trawl vessels may purchase new gear (e.g., purse sein or bottom trawl) in order to access inshore areas, while others may opt to fish offshore, with potentially higher operational costs, and/or pursue other fisheries to make up for any lost herring revenue. The FEIS also estimates that this measure has the potential to reduce costs, such as searching and fishing time, for other fisheries and ecotourism companies that rely on herring predators, if it improves the inshore availability of herring. Therefore, consistent with National Standards 5, 7, 8, and 10, the benefits to other user groups, such as potentially reduced trips costs, higher annual catches, and improved safety, outweigh the costs to the midwater trawl vessels. While benefits to other user groups are difficult to specifically quantify until new measures are in place and data on their effects become available, we expect economic benefits would extend to the fishing communities that support these user groups as they will likely benefit from increased access to herring. Further, we expect that negative economic impacts on midwater trawl

vessels can be minimized if vessels are able to increase their harvest of herring offshore. The Council considered other alternatives to minimize user group conflict, including prohibiting midwater trawling inshore of 25 nautical miles (46 km) and 50 nautical miles (93 km), but recommended a shallower midwater trawl restricted area instead as a way to more fairly and equitably balance the costs and benefits of the measure. To help mitigate the economic impact of the inshore midwater trawl restricted area and provide access for the mackerel fishery, the Council also recommended that RSA compensation fishing trips be exempt from the inshore prohibition on midwater trawling.

The inshore midwater trawl restricted area is not arbitrary and capricious. It is consistent with the problem statement developed by the Council to describe user group conflict and the objectives of the Herring FMP, including providing for full utilization of the OY and, to the extent practicable, controlled opportunities for participants in other New England and Mid-Atlantic fisheries. Because information to quantify the impact of midwater trawling on other user groups is limited, the FEIS analyzed the degree of overlap between the midwater trawl fleet and other user groups, consistent with National Standard 2. While overlap with the midwater trawl fishery does not necessarily translate into negative biological impacts on predators, less overlap may reduce potential user conflicts, provided midwater trawl effort does not shift into other areas. Additionally, the amendment's FEIS serves as the fishery impact statement, as it analyzes the conservation, economic, and social impacts of the management measures in Sections 4.1–4.8 in the FEIS, and the cumulative effects assessment is included in Section 4.9 of the FEIS.

Comment 5: Some commenters contend that user group conflict was excluded from Amendment 8 scoping and, therefore, it is not acceptable for user group conflict to be the basis for implementing an exclusion zone.

Response: On August 21, 2015 (80 FR 50825), the Council published a supplemental NOI announcing it was expanding the scope of Amendment 8 to consider localized depletion in inshore waters. The supplemental NOI defined localized depletion as harvesting more fish from an area than can be replaced within a given time period. It also explained the Council was seeking input from the interested public as to how to define, measure, and evaluate impacts, and minimize inshore, localized depletion in the herring

fishery as part of Amendment 8. Public comment during the supplemental scoping made it clear that localized depletion concerns voiced by many stakeholders were not just related to the biological impacts of herring removals on the herring stock and on predators of herring. Public comment indicated that localized depletion should be defined to also include the user group conflicts that result from localized depletion and that the impacts of localized depletion should be measured and evaluated relative to competing uses for the herring resource and potentially negative economic impacts on businesses that rely on predators of herring. Defining the nature of localized depletion and identifying its impacts so that the Council could best address localized depletion was precisely the type of information sought by the supplemental NOI expanding the scope of Amendment 8.

Comment 6: Commenters oppose the inshore midwater trawl restricted area because of its inherent effect on the allocation of herring between user groups and believe:

- Fisheries regulations should not be popularity contests based on feelings and perceived user conflict instead of evidence and facts;
- Ocean access belongs to all and gear exclusions should not be based on prioritizing some user groups over others;
- Restricting inshore midwater trawling sets a precedent for excluding trawling in other areas, and may lead to exclusion zones in the squid fishery;
- Prohibiting inshore midwater trawling will increase bycatch and impacts to habitat, especially on herring spawning areas, should midwater trawl vessels switch to bottom trawl gear; and
- Removals by purse seine gear are similar in intensity to removals by midwater trawl gear, as both gear types target and harvest large schools of herring.

Response: Many of the Council's actions entail catch allocations between user groups. The National Standard Guidelines recognize that allocations of fishing privileges include assignment of ocean areas to different gear users that must comply with National Standard 4. The Council's prohibition on inshore midwater trawling complies with National Standard 4's requirement to be fair and equitable and reasonably calculated to promote conservation. The decision was based on fishing effort and socioeconomic data. Rather than being the result of its popularity with stakeholders as some claim, it balances the needs of user groups and is expected to also provide conservation benefits for

inshore areas due to herring's important role in the ecosystem as forage. The Council focused on midwater trawl vessels because of their potential for high-volume catches, and they are relatively more mobile and capable of fishing in offshore areas than vessels using other gear types. While purse seine vessels are capable of high-volume catches, midwater trawl vessels have historically harvested more than 65 percent of the annual catch limit. The FEIS concludes that the inshore midwater trawl restricted area is expected to only have a neutral to low negative impact on habitat. Any effort shift from bottom trawl to midwater trawl gear is not expected to significantly impact habitat because of the existing seasonal and area restrictions on using small-mesh bottom trawl gear within the inshore restricted area and the previous determination that the herring fishery has only minimal and temporary impacts on essential fish habitat. We understand the commenters dislike the measure, but their concerns do not demonstrate the measure is inconsistent with applicable law.

Comment 7: Some commenters are concerned about the economic impact of the inshore midwater trawl restricted area on the herring, mackerel, and lobster fisheries, specifically because:

- Herring migrate through inshore waters and the midwater trawl fleet needs flexibility to be able to harvest herring where it is available;
- Losing midwater trawl access to inshore areas will have negative economic impacts on fishing vessels, the businesses and communities that support them, and availability and price of bait for the lobster fishery;
- The restricted area includes mackerel fishing grounds and vessels rely on higher value mackerel to supplement herring revenue;
- Amendment estimates a 30-percent reduction in revenue, but because the majority of herring and mackerel are caught in inshore waters, it would be more like a 70-percent reduction in revenue; and
- Nearly all recent midwater trawl catches have come from the inshore restricted area and vessels will not be able to recoup lost revenue offshore because environmental conditions in Area 3 have not been suitable for catching herring.

Response: The amendment's FEIS includes an economic analysis of the potential impacts of prohibiting inshore midwater trawling. Based on data showing that midwater trawl vessels historically harvested the majority of their catch offshore of the inshore

midwater trawl restricted area, the FEIS estimates 30 percent of midwater trawl revenue came from within the inshore restricted area. While economic impacts on the herring, mackerel, and lobster fisheries are expected to be low negative to negative, the impacts on predator fisheries and ecotourism are described as uncertain to low positive. Negative economic impacts may be minimized if midwater trawlers can harvest herring and mackerel offshore and the lobster fishery can use alternatives to herring for bait, such as menhaden, redfish, and skates. In the short term, the availability of herring to the fishery may be affected by the historically low recruitment and overfished stock status. But longer term, as the stock rebuilds, the Council expects midwater trawl vessels may once again be able to harvest the majority of their catch offshore.

Comment 8: Some commenters caution that the inshore midwater trawl restricted area, covering a large area and effective year-round, is inconsistent with the problem identified in the amendment and ignores the user group overlap analysis. They also express concern that the amendment's FEIS does not acknowledge that the measure is a herring allocation among fleets, incorrectly identifies the inshore midwater trawl restricted area as a compromise between competing interests, and does not reasonably consider the impacts of an effort shift if midwater trawl vessels begin using bottom trawl gear.

Response: We disagree. As previously described, the inshore midwater trawl restricted area allocates fishing opportunities to a wide variety of user groups in a manner that promotes the conservation of herring for predators and is based on the best available science on the overlap between user groups. The FEIS acknowledges the inshore midwater trawl restricted area is an allocation of fishing opportunities between different user groups. Because the Council designed the measures to help limit concentrated removals of herring in inshore areas to allow for herring as forage in the ecosystem and support businesses that depend on predators of herring, the FEIS correctly describes the measure as a fair compromise that balances the competing needs of user groups. The FEIS recognizes the potential for an effort shift from midwater to bottom trawl gear, and acknowledges that biological benefits and socioeconomic benefits to other user groups may be minimized if midwater trawl vessels continue to fish inshore with bottom trawl gear. Whether midwater trawl vessels convert to bottom trawl gear will

likely depend on several factors, such as the cost of converting, market demands, and the availability of herring offshore. In Area 1A, herring is only available for harvest June through December and is more frequently caught using purse seine gear than bottom trawl gear. Additionally, the states of Maine, New Hampshire, and Massachusetts implement weekly landings limits that may deter a midwater trawl vessel from converting to bottom trawl gear to fish in Area 1A. Given time and area restrictions on using small-mesh bottom trawl gear in Management Areas 1B and 3, the FEIS states that herring vessels are unlikely to substantially expand the use of bottom trawl gear in those areas, with the exception that they may try to access the western portion of the Raised Footrope Exemption Area from September to December.

Comment 9: Some commenters assert the amendment does not consider the impact of restricting fishing inshore in combination with the loss of fishing grounds due to future offshore wind development.

Response: During the development of Amendment 8, there were no offshore wind projects in place or construction and operation plans (COPs) made public for any of the herring management areas. While COPs for South Fork Wind Farm were made public in June 2018, the COPs for Vineyard Wind and Bay State Wind were made public in October 2018 and March 2019, respectively, after the Council adopted final measures in Amendment 8 at its September 2018 meeting. The FEIS qualitatively considers the impacts of offshore wind projects, along with environmental and other non-fishing related activities, as part of the cumulative effects assessment (Section 4.9). It concludes that the direct and indirect effects of the management measures in Amendment 8 considered in combination with all other actions (*i.e.*, past, present, and reasonably foreseeable future actions), should yield non-significant low positive impacts on human communities. Without wind projects being in place or COPs made public, quantitatively evaluating the impacts of offshore wind projects in combination with measures considered in Amendment 8 would have been too speculative.

ABC Control Rule

Comment 10: Commenters support implementation of the ABC control rule because they believe it will:

- Balance the goals and objectives of the Herring FMP, including long-term, biologically-sustainable harvest,

accounting for forage, and sustainable source of fishing revenue;

- Better account for forage at times of high biomass while continuing to safeguard the herring fishery during times of lower biomass;

- Provide forage for fish, marine mammals, and seabirds;

- Better align with ecosystem-based management;

- Support ecosystem health and the economies of coastal communities;

- Help reduce inconsistent and unpredictable fishing to ensure a steady supply of bait for the lobster fishery; and

- Help ensure the long-term viability of herring, its fishery, and the predators that rely on herring.

The joint letter from CLF, NAS, NRDC, Pew, and Wild Oceans explained that, initially, they advocated for a more conservative ABC control rule to maintain a forage base for economically valuable predator fisheries and the marine ecosystem. However, recognizing the economic implications of the 2018 herring stock assessment, indicating that herring biomass and recruitment were low, they now support the Council-recommended ABC control rule to provide valuable forage for fish, marine mammals, and seabirds, while allowing fishing opportunities and long-term benefits for the herring and lobster fisheries. They believe the control rule is consistent with the Herring FMP, Magnuson-Stevens Act, National Standard 1 guidelines for managing forage fish, and the best available science.

The TNC supports the ABC control rule given that the 2018 herring stock assessment concluded herring biomass is declining, stock recruitment is at a historic low, and the probability of the stock becoming overfished is high. It acknowledges that the ABC control rule may result in negative short-term economic impacts for participants in the herring and lobster fisheries, but believes it will provide long-term benefits for the marine ecosystem and the fisheries that depend on herring.

Response: We concur with the commenters' support for the ABC control rule.

Comment 11: Members of the herring industry stress that the need for a control rule is flawed because the 2018 stock assessment assumes no link between SSB and recruitment. They explain that recruitment in the herring fishery is environmentally driven and variable, that the recent experience of below average recruitment is unusual, and that small herring seen both inshore and offshore are part of a recruitment

event independent of a new control rule.

Response: The Council recommended a new ABC control rule because it determined that the previous ABC control rule did not sufficiently provide for the role of herring in the ecosystem, especially when biomass is reduced and there is uncertainty in the assessment. While the assessment accounts for natural mortality, it is more risk averse to use an ABC control rule that reserves a portion of the catch for predators in the event estimates of biomass are uncertain. The inability of the 2018 stock assessment to quantitatively estimate the relationship between SSB and recruitment does not mean that the relationship does not exist. The FEIS acknowledges that environmental factors likely have a larger influence on herring recruitment and abundance trends than fishing, but concluded that reducing fishing pressure, when there is substantial uncertainty, is expected to prevent overfishing and optimize yield for the fishery in the long term.

Comment 12: Some members of the herring industry expressed concern with the management strategy evaluation (MSE) used to develop the ABC control rule, including the following:

- The MSE was rushed, stakeholder engagement and modeling were limited in scope and not used to their full potential, especially modeling of the spatial distribution of herring and predator/prey interactions;

- The analysis did not consider abundance, availability, or nutritional value of alternative prey species, nor did it consider the impact of herring abundance on the abundance of alternative prey species;

- The Council had no understanding of how this control rule would result in real-world specifications; and

- The analysis did not incorporate rebuilding measures that would be required if the stock is overfished, so the benefits of the more conservative control rules are illusory.

Response: The Council developed alternatives for a herring ABC control rule using an MSE. MSE is a decision-making tool that uses computer modeling to compare the performance of alternatives (*i.e.*, management strategies) under various scenarios to achieve multiple, competing objectives. Because we do not have a complete understanding of the ocean ecosystem and all the sources of uncertainty, MSEs are useful to evaluate how alternatives perform under different environmental conditions. The Council held two public workshops to generate stakeholder input to help identify objectives for the MSE analysis. Input generated by the

workshops was considered by the Council and, for the most part, adopted and included in Amendment 8. The MSE used three models, a herring model, a predator model, and an economic model, to compare ABC control rule performance. The models simulated how well the ABC control rules achieved herring management objectives, such as biomass, yield, revenue, and predator considerations, under simulated environmental conditions related to herring growth, stock assessment bias, and productivity of herring. Results of the MSE informed the range of ABC control rule alternatives and impact analyses of those alternatives in Amendment 8.

Development of the control rule with an MSE was, despite unavoidable data gaps and modeling limitations, based on the best scientific information available. To ensure the MSE was sufficient for identifying and analyzing a range of ABC control rules, the Council arranged for an external peer review of the MSE. The reviewers recognized that a tremendous amount of work was completed in a rigorous manner under the time and resource constraints of the MSE. While the models were constrained by the availability of data, the reviewers agreed the three models used in the MSE were appropriate for evaluating ABC control rules in the context of herring's role as forage in the ecosystem. The model used for herring included scenarios where herring productivity was high, as well as low, to explicitly enable the Council to evaluate the impact of ABC control rules on real-world specifications given fluctuations in herring biomass. The commenters are correct that the model used for herring did not include rebuilding measures. However, rebuilding measures are not required to be effective until 2 years after a stock has been declared overfished. There are potential conservation benefits associated with conservative control rules, especially like the Council-recommended control rule that sets herring catch at zero when biomass is low, until rebuilding measures become effective. Overall, the reviewers concluded that the data, methods, and results of the MSE were sufficient for identifying and analyzing a range of ABC control rule alternatives and that the MSE represents the best available science for evaluating the performance of herring control rules and their potential impact on key predators.

Comment 13: Commenters oppose implementation of the ABC control rule because they believe:

- It is too precautionary, as evident by its 2-percent chance of overfishing in

2019 when only a 50-percent or less chance of overfishing is required under the Magnuson-Stevens Act;

- It is not appropriate for herring because it double counts predator needs and adds an additional forage buffer of at least 15 percent;

- It is not capable of explicitly accounting for herring's role as forage because many predators are generalists and consume a variety of prey species;
- Setting catch to zero when biomass is low does not account for herring as forage because herring's role as forage does not diminish as biomass diminishes;

- It would not have prevented the current situation of low herring biomass and recruitment, but it does ensure the economic impact of low herring biomass is more negative than necessary; and
- It lacks "exceptional circumstances" protocol to address scenarios with low biomass, especially when it would prohibit fishing.

Response: We disagree with these comments. The control rule was developed by the Council to reflect its harvest policy for herring and provide for a long-term sustainable herring fishery. It moderately reduces fishing mortality (80 percent of the rate that supports MSY reduced from 90 percent) when biomass is high, eliminates catch in response to low biomass (10 percent or less of the B_{MSY}), and takes into account herring's role as forage for predators. As described previously, an external peer review found the results of the MSE were sufficient for identifying and analyzing a range of ABC control rule alternatives and that the MSE represents the best available science for evaluating the performance of herring control rules and their potential impact on key predators. Similar to the inshore midwater trawl restricted area, the ABC control rule also considers impacts across user groups. The control rule modestly reduces the amount of catch available to the herring and lobster fisheries to support herring as forage for other user groups. Instead of an "exceptional circumstances" protocol to allow for fishing when biomass is very low, the Council recommended that catch be set at zero to help rebuild biomass and ensure herring is available to predators. The control rule is intended to produce a low variation in yield, low probability of a herring fishery shutdown, and low probability of overfishing. As a result, the Council anticipates that short-term negative economic impacts on participants in the herring, mackerel, or lobster fisheries resulting from a reduced herring harvest may become a long-term economic benefit for them and other user groups.

Comment 14: Some members of the herring industry argue for the continued use of the status quo control rule because it balances scientific uncertainty with stability for the fishery. They also caution the new control rule is not consistent with the Magnuson-Stevens Act because the FEIS did not indicate any benefit to predators, so the economic costs of the control rule outweigh the benefits.

Response: Currently, there is no ABC control rule for the Herring FMP. Interim control rules have been applied in the past, but the harvest policy has been temporary and the Council has considered different ABC options with each specifications action. The commenters' conclusion that the FEIS does not indicate any benefit to predators is incorrect. The FEIS holds that the Council-recommended ABC control rule is expected to have positive biological impacts on the herring stock and low positive biological impacts on herring predators. While the commenters are correct that the FEIS estimates minimal differences in short-term impacts on predator species across ABC control rule alternatives, the ability of the MSE's modeling to detect differences in predator metrics (*i.e.*, common tern productivity, bluefin tuna weight, spiny dogfish biomass) and marine mammals was limited by the amount and scale of available predator data. The FEIS notes that, in general, more herring left unfished in the ecosystem could have positive impacts on herring predators, despite that relatively small differences in overall ABC may not have measurable differences in overall impacts on herring predators because many predators are opportunistic. Additionally, the FEIS explains that using ABC control rules that reduce fishing mortality at lower biomass levels would have more long-term positive benefits on predators, compared to control rules that allow higher fishing mortalities (*status quo*).

In addition to providing for herring's role as forage in the ecosystem, the control rule is also intended to provide for a sustained participation of fishing communities that depend on herring. Information about the importance of herring to affected fishery-related businesses and communities was included in the FEIS. The FEIS describes preventing overfishing and optimizing yield as expected long-term impacts of establishing an ABC control rule. It also concludes that these impacts are expected to benefit herring fishery-related business, herring fishing communities, and other communities that depend on predators of herring (*e.g.*, other commercial fisheries,

recreational fisheries, ecotourism). In the short term, the FEIS explains there will likely be negative impacts on herring vessels, since catch levels would likely be greatly reduced until herring biomass and recruitment increase. But, it acknowledges negative short-term economic impacts are expected under all the control rule alternatives, including *status quo*, based on low projected herring biomass for the next several years. Therefore, because the potential benefits, biological as well as socioeconomic, are commensurate with potential costs, we determined the ABC control rule is consistent with the Magnuson-Stevens Act.

Classification

Pursuant to section 304(b)(3) of the Magnuson-Stevens Act, the National Marine Fisheries Service (NMFS) Assistant Administrator has determined that this final rule is consistent with Amendment 8 to the Herring FMP, other provisions of the Magnuson-Stevens Act, and other applicable law.

NMFS is also implementing regulations in this rule that are necessary to carry out any fishery management plan or amendment pursuant to section 305(d) of the Magnuson-Stevens Act, which provides that the Secretary of Commerce may promulgate regulations necessary to carry out a FMP or the Magnuson-Stevens Act.

This final rule has been determined to be not significant for purposes of Executive Order (E.O.) 12866.

This final rule is not an E.O. 13771 regulatory action because this action is not significant under E.O. 12866.

This final rule contains no information collection requirements under the Paperwork Reduction Act of 1995.

The Council prepared an FEIS for Amendment 8 to the Herring FMP. We filed the FEIS with the Environmental Protection Agency on August 12, 2019. A notice of availability for the FEIS was published in the **Federal Register** on August 16, 2019 (84 FR 41988). The FEIS describes the impacts of the measures on the environment. This amendment establishes a herring ABC control rule and prohibits the use of midwater trawl gear in inshore waters from Canada to Connecticut. The biological impact of the ABC control rule on the herring resource is expected to be positive. However, other factors, such as environmental conditions, may have an even greater influence on herring biomass and could affect the stock regardless of the control rule. Short-term revenue reductions are expected as a result of the ABC control

rule likely resulting in negative economic impacts on the herring fishery, with ripple effects on the communities involved in the Atlantic mackerel and lobster fisheries. These negative economic impacts are expected to be exacerbated by the low herring biomass and recruitment identified in the 2020 stock assessment. In the long term, fishing under a control rule that ensures continued, sustainable harvest of the herring resource is expected to benefit the herring fishery and its communities, as well as indirectly benefiting fisheries that rely on herring as forage in the ecosystem. The biological impacts of prohibiting midwater trawling in inshore areas on the herring resource are expected to be neutral to low positive if the measure prevents the fishery from harvesting the annual catch limit (ACL) or reduces fishing pressure on the inshore stock component. However, in the short term, the ACL is expected to be low, so the fishery is expected to be able to harvest the ACL. The biological impacts of prohibiting trawling on non-target and protected species are somewhat uncertain due to unknown effort shifts. Midwater trawl effort may move offshore or some vessels may decide to change gear type in order to continue fishing inshore. The socioeconomic impacts are expected to be negative for the midwater trawl fleet and associated fishing communities. The gear prohibition is estimated to impact about 30 percent of total revenue for midwater water trawl vessels. Some of this revenue may be recovered by fishing in offshore areas, but trips costs will be higher. The socioeconomic impacts of the gear prohibition on predator fisheries and ecotourism industries are expected to be potentially low positive. This ecosystem is complex and the linkages between herring and predators are complex: Having less fishing pressure in one area may not necessarily mean there are positive impacts on a predator that spends time in that area, as well as other areas. Potential negative impacts associated with user conflicts in these areas are expected to be lower. However, some effort will shift so there could be increased conflicts in other areas and seasons that do not exist now. In approving Amendment 8 on November 19, 2019, NMFS issued a

Record of Decision (ROD) identifying the selected alternative. A copy of the ROD is available from NMFS (see **FOR FURTHER INFORMATION CONTACT**).

We prepared a final regulatory flexibility analysis (FRFA) in support of this action. The FRFA incorporates the initial RFA (IRFA), a summary of the significant issues raised by the public comments in response to the IRFA, our responses to those comments, and a summary of the analyses completed in support of this action. A description of why this action was considered, the objectives of, and the legal basis for this rule is contained in the preamble to the proposed and this final rule, and is not repeated here. All of the documents that constitute the FRFA and a copy of the EIS/RIR/IRFA are available upon request (see **ADDRESSES**) or via the internet at: <http://www.nefmc.org>.

A Statement of the Significant Issues Raised by the Public in Response to the IRFA, a Statement of the Agency's Assessment of Such Issues, and a Statement of Any Changes Made in the Final Rule as a Result of Such Comments

We received 268 comment letters on the NOA and proposed rule. Those comments, and our responses, are contained in the Comments and Responses section of this final rule and are not repeated here. Comments 1, 2, 4, 7, 9, 13, and 14 discussed the economic impacts of the measures, but did not directly comment on the IRFA. All revisions and clarifications to the proposed rule, as well as the rationale for those revisions, are described in Revisions and Additional Clarifications to the Proposed Rule section of this final rule and are not repeated here.

Description and Estimate of the Number of Small Entities to Which the Rule Would Apply

Effective July 1, 2016, NMFS established a small business size standard of \$11 million in annual gross receipts for all businesses primarily engaged in the commercial fishing industry for RFA compliance purposes only (80 FR 81194, December 29, 2015). A commercial fishing business is classified as a small business if it is independently owned and operated, is not dominant in its field of operation,

and has combined annual receipts not in excess of \$11 million.

This action affects all permitted herring vessels. Therefore, the direct regulated entity is a firm that owns at least one herring permit. There are many firms that hold an open-access Category D herring permit. Unlike open-access Category E herring permit holders, Category D permit holding firms harvest only a small fraction of herring and do not typically use midwater trawl gear so they are minimally affected by the regulations. Category E permit holding firms, however, are affected by the regulations because they have a higher possession limit (20,000 lb (9,072 kg) versus 6,600 lb (2,994 kg)) and are more likely to use midwater trawl gear.

As of June 1, 2018, there were 862 firms (852 small) that held at least 1 herring permit. There were 126 (123 small) firms that were active in the herring fishery (i.e., having landed herring in 2017) and held at least 1 herring permit. There were 101 (94 small) firms that held at least 1 limited access (Categories A, B, C) herring permit or a Category E open access herring permit. There were 53 (50 small) firms that held a limited access or Category E herring permit and were active in the herring fishery. Table 1 characterizes “gross receipts” and “herring receipts” for firms that held a limited access or Category E open access herring permit. Table 2 characterizes “gross receipts” and “herring receipts” for firms that held a limited access or Category E open access herring permit and were active in the herring fishery. In both tables, the small entities are further characterized by gear type to facilitate comparisons. There are fewer than three large entities that use midwater trawl gear, so the description of the large entities is not disaggregated to gear type to preserve confidentiality under the Magnuson-Stevens Act. Table 3 characterizes “gross receipts” and “herring receipts” for firms that held a herring permit and Table 4 characterizes “gross receipts” and “herring receipts” for firms that held a herring permit and were active in the herring fishery. Tables 3 and 4 include firms with Category D open access herring permits that would be minimally impacted by this action.

TABLE 1—AVERAGE RECEIPTS FROM FIRMS WITH LIMITED ACCESS AND CATEGORY E OPEN ACCESS HERRING PERMITS IN 2017

Firm size	Firms	Gear	Gross receipts	Herring receipts
Large	7	All	\$20,396,374	\$492,598
Small	9	Midwater Trawl	2,499,646	1,241,225

TABLE 1—AVERAGE RECEIPTS FROM FIRMS WITH LIMITED ACCESS AND CATEGORY E OPEN ACCESS HERRING PERMITS IN 2017—Continued

Firm size	Firms	Gear	Gross receipts	Herring receipts
Small	85	Non-Midwater Trawl	1,299,110	137,954

Source: NMFS.

TABLE 2—AVERAGE RECEIPTS FROM FIRMS WITH LIMITED ACCESS AND CATEGORY E OPEN ACCESS HERRING PERMITS THAT WERE ACTIVE IN THE HERRING FISHERY IN 2017

Firm size	Firms	Gear	Gross receipts	Herring receipts
Large	3	All	\$16,567,731	\$1,149,395
Small	9	Midwater Trawl	2,499,646	1,241,225
Small	41	Non-Midwater Trawl	1,276,255	286,002

Source: NMFS.

TABLE 3—AVERAGE RECEIPTS FROM ALL FIRMS WITH A HERRING PERMIT IN 2017

Firm size	Firms	Gear	Gross receipts	Herring receipts
Large	10	All	\$19,873,801	\$344,818
Small	9	Midwater Trawl	2,499,646	1,241,225
Small	843	Non-Midwater Trawl	639,591	14,002

Source: NMFS.

TABLE 4—AVERAGE RECEIPTS FROM ALL FIRMS WITH A HERRING PERMIT THAT WERE ACTIVE IN THE HERRING FISHERY IN 2017

Firm size	Firms	Gear	Gross receipts	Herring receipts
Large	3	All	\$16,567,731	\$1,149,395
Small	9	Midwater Trawl	2,499,646	1,241,225
Small	114	Non-Midwater Trawl	681,943	103,540

Source: NMFS.

Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements

This action contains no new collection-of-information, reporting, or recordkeeping requirements.

Federal Rules Which May Duplicate, Overlap, or Conflict With the Proposed Rule

This action does not duplicate, overlap, or conflict with any other Federal rules.

Description of the Steps the Agency Has Taken To Minimize the Significant Economic Impact on Small Entities Consistent With the Stated Objectives of Applicable Statutes

Recognizing the potential economic impact of this amendment, the Council recommended measures that achieved the amendment goals while minimizing negative economic impacts on fishery participants.

Of all the ABC control rule alternatives considered by the Council,

the Council recommended the control rule that would provide the second highest level of catch. This control rule was developed by the Council to reflect its harvest policy for herring and provide for a long-term sustainable herring fishery. It moderately reduces fishing mortality (80 percent of the rate that supports maximum sustainable yield reduced from 90 percent) when biomass is high, eliminates catch in response to low biomass (10 percent or less of the biomass to support maximum sustainable yield), and takes into account herring's role as forage for predators. As described previously, an external peer review found the results of the MSE were sufficient for identifying and analyzing a range of ABC control rule alternatives and that the MSE represents the best available science for evaluating the performance of herring control rules and their potential impact on key predators. Similar to the inshore midwater trawl restricted area, the ABC control rule also considers impacts across user groups. The control rule

modestly reduces the amount of catch available to the herring and lobster fisheries to support herring as forage for other user groups. The Council anticipates that short-term negative economic impacts on participants in the herring, mackerel, or lobster fisheries resulting from a reduced herring harvest may become a long-term economic benefit for other user groups. Especially if the control rule performs as recommended by the Council, with a low variation in yield, low probability of a herring fishery shutdown, and low probability of overfishing.

The Council developed the inshore midwater trawl restricted area consistent with the amendment's problem statement and the FEIS's overlap analysis. The Council considered other alternatives to minimize user group conflict, including prohibiting midwater trawling inshore of 25 nautical miles (46 km) and 50 nautical miles (93 km), but recommended a shallower midwater trawl restricted area instead as a way to

more fairly and equitably balance the costs and benefits of the measure. Additionally, to help mitigate the economic impact of the inshore midwater trawl restricted area and provide access for the mackerel fishery, the Council also recommended that RSA compensation fishing trips would be exempt from the prohibition on inshore midwater trawling.

Section 212 of the Small Business Regulatory Enforcement Fairness Act of 1996 states that, for each rule or group of related rules for which an agency is required to prepare a FRFA, the agency shall publish one or more guides to assist small entities in complying with the rule, and shall designate such publications as “small entity compliance guides.” The agency shall explain the actions a small entity is required to take to comply with a rule or group of rules. As part of this rulemaking process, a fishery bulletin that serves as a small entity compliance guide was prepared. Copies of this final rule are available from the Greater Atlantic Regional Fisheries Office (GARFO), and the fishery bulletin (*i.e.*, compliance guide) will be sent to all holders of permits for the herring fishery. The fishery bulletin and this final rule will be posted on the GARFO website.

List of Subjects in 50 CFR Part 648

Fisheries, Fishing, Recordkeeping and reporting requirements.

Dated: December 29, 2020.

Samuel D. Rauch, III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR part 648 is amended as follows:

PART 648—FISHERIES OF THE NORTHEASTERN UNITED STATES

■ 1. The authority citation for part 648 continues to read as follows:

Authority: 16 U.S.C. 1801 *et seq.*

■ 2. In § 648.2, revise the definition for “Observer or monitor” and add the definition for “Slippage in the Atlantic herring fishery.”

§ 648.2 Definitions.

* * * * *

Observer or monitor means any person certified by NMFS to collect operational fishing data, biological data, or economic data through direct observation and interaction with operators of commercial fishing vessels as part of NMFS’ Northeast Fisheries Observer Program. Observers or

monitors include NMFS-certified fisheries observers, at-sea monitors, portside samplers, and dockside monitors.

* * * * *

Slippage in the Atlantic herring fishery means discarded catch from a vessel issued an Atlantic herring permit that is carrying a NMFS-certified observer or monitor prior to the catch being brought on board or prior to the catch being made available for sampling and inspection by a NMFS-certified observer or monitor after the catch is on board. Slippage also means any catch that is discarded during a trip prior to it being sampled portside by a portside sampler on a trip selected for portside sampling coverage by NMFS. Slippage includes releasing catch from a codend or seine prior to the completion of pumping the catch aboard and the release of catch from a codend or seine while the codend or seine is in the water. Fish that cannot be pumped and remain in the codend or seine at the end of pumping operations are not considered slippage. Discards that occur after the catch is brought on board and made available for sampling and inspection by a NMFS-certified observer or monitor are also not considered slippage.

* * * * *

- 3. Amend § 648.11 by:
 - a. Revising paragraphs (h)(1), (4)(ii), (5)(ii)(C), (5)(iv)(A), (5)(vi), (5)(vii)(A), and (5)(vii)(G);
 - b. Revising paragraphs (i)(1), (2), (3)(ii), (4)(iii), and (5);
 - c. Revising paragraph (k)(4)(i); and
 - d. Revising paragraphs (m)(1)(v), (2)(iii)(C), and (4)(i).

§ 648.11 Monitoring coverage.

* * * * *

(h) * * * (1) *General.* An entity seeking to provide monitoring services, including services for IFM Programs described in paragraph (g) of this section, must apply for and obtain approval from NMFS following submission of a complete application. Monitoring services include providing NMFS-certified observers, monitors (at-sea monitors and portside samplers), and/or electronic monitoring. A list of approved monitoring service providers shall be distributed to vessel owners and shall be posted on the NMFS Fisheries Sampling Branch (FSB) website: <https://www.fisheries.noaa.gov/resource/data/observer-providers-northeast-and-mid-atlantic-programs>.

* * * * *

- (4) * * *
 - (ii) If NMFS approves the application, the monitoring service provider’s name

will be added to the list of approved monitoring service providers found on the NMFS/FSB website and in any outreach information to the industry. Approved monitoring service providers shall be notified in writing and provided with any information pertinent to its participation in the observer or monitor programs.

* * * * *

- (5) * * *
- (ii) * * *

(C) The required observer or monitor equipment, in accordance with equipment requirements, prior to any deployment and/or prior to NMFS observer or monitor certification training; and

* * * * *

(iv) * * * (A) A candidate observer’s first several deployments and the resulting data shall be immediately edited and approved after each trip by NMFS/FSB prior to any further deployments by that observer. If data quality is considered acceptable, the observer would be certified.

* * * * *

(vi) *Observer and monitor training requirements.* A request for a NMFS/FSB Observer or Monitor Training class must be submitted to NMFS/FSB 45 calendar days in advance of the requested training. The following information must be submitted to NMFS/FSB at least 15 business days prior to the beginning of the proposed training: A list of observer or monitor candidates; candidate resumes, cover letters and academic transcripts; and a statement signed by the candidate, under penalty of perjury, that discloses the candidate’s criminal convictions, if any. A medical report certified by a physician for each candidate is required 7 business days prior to the first day of training. CPR/First Aid certificates and a final list of training candidates with candidate contact information (email, phone, number, mailing address and emergency contact information) are due 7 business days prior to the first day of training. NMFS may reject a candidate for training if the candidate does not meet the minimum qualification requirements as outlined by NMFS/FSB minimum eligibility standards for observers or monitors as described on the National Observer Program website: <https://www.fisheries.noaa.gov/topic/fishery-observers#become-an-observer>.

(vii) * * *

(A) *Deployment reports.* The monitoring service provider must report to NMFS/FSB when, where, to whom, and to what vessel an observer or monitor has been deployed, as soon as practicable, and according to

requirements outlined by NMFS. The deployment report must be available and accessible to NMFS electronically 24 hours a day, 7 days a week. The monitoring service provider must ensure that the observer or monitor reports to NMFS the required electronic data, as described in the NMFS/FSB training. Electronic data submission protocols will be outlined in training and may include accessing government websites via personal computers/ devices or submitting data through government issued electronics. The monitoring service provider shall provide the raw (unedited) data collected by the observer or monitor to NMFS at the specified time per program.

* * * * *

(G) *Status report.* The monitoring service provider must provide NMFS/FSB with an updated list of contact information for all observers or monitors that includes the identification number, name, mailing address, email address, phone numbers, homeports or fisheries/ trip types assigned, and must include whether or not the observer or monitor is "in service," indicating when the observer or monitor has requested leave and/or is not currently working for an industry-funded program. Any Federally contracted NMFS-certified observer not actively deployed on a vessel for 30 days will be placed on Leave of Absence (LOA) status (or as specified by NMFS/FSB according to most recent Information Technology Security Guidelines. Those Federally contracted NMFS-certified observers on LOA for 90 days or more will need to conduct an exit interview with NMFS/FSB and return any NMFS/FSB issued gear and Common Access Card (CAC), unless alternative arrangements are approved by NMFS/FSB. NMFS/FSB requires 2-week advance notification when a Federally contracted NMFS-certified observer is leaving the program so that an exit interview may be arranged and gear returned.

* * * * *

(1) *Requirements.* To be certified, employees or sub-contractors operating as observers or monitors for monitoring service providers approved under paragraph (h) of this section. In addition, observers must meet NMFS National Minimum Eligibility Standards for observers specified at the National Observer Program website: <https://www.fisheries.noaa.gov/topic/fishery-observers#become-an-observer>.

(2) *Observer or monitor training.* In order to be deployed on any fishing vessel, a candidate observer or monitor must have passed an appropriate

NMFS/FSB Observer Training course and must adhere to all NMFS/FSB program standards and policies. If a candidate fails training, the candidate and monitoring service provider shall be notified immediately by NMFS/FSB. Observer training may include an observer training trip, as part of the observer's training, aboard a fishing vessel with a trainer. Contact NMFS/FSB for the required number of program specific observer and monitor training certification trips for full certification following training.

(3) * * *

(ii) Be physically and mentally capable of carrying out the responsibilities of an observer on board fishing vessels, pursuant to standards established by NMFS. Such standards shall be provided to each approved monitoring service provider.

* * * * *

(4) * * *

(iii) Be physically and mentally capable of carrying out the responsibilities of a monitor on board fishing vessels, pursuant to standards established by NMFS. Such standards shall be provided to each approved monitoring service provider.

* * * * *

(5) *Probation and decertification.* NMFS may review observer and monitor certifications and issue observer and monitor certification probation and/or decertification as described in NMFS policy.

* * * * *

(k) * * *

(4) * * *

(i) An owner of a scallop vessel required to carry an observer under paragraph (k)(3) of this section must arrange for carrying an observer certified through the observer training class operated by the NMFS/FSB from an observer service provider approved by NMFS under paragraph (h) of this section. The owner, operator, or vessel manager of a vessel selected to carry an observer must contact the observer service provider and must provide at least 48-hr notice in advance of the fishing trip for the provider to arrange for observer deployment for the specified trip. The observer service provider will notify the vessel owner, operator, or manager within 18 hr whether they have an available observer. A list of approved observer service providers shall be posted on the NMFS/FSB website: <https://www.fisheries.noaa.gov/resource/data/observer-providers-northeast-and-mid-atlantic-programs>. The observer service provider may take up to 48 hr to arrange

for observer deployment for the specified scallop trip.

* * * * *

(m) * * *

(1) * * *

(v) To provide the required IFM coverage aboard declared Atlantic herring trips, NMFS-certified observers and monitors must hold a high volume fisheries certification from NMFS/FSB.

(2) * * *

(iii) * * *

(C) For a waiver of IFM requirements on trip by a wing vessel as described in paragraph (m)(1)(ii)(E) of this section.

* * * * *

(4) * * *

(i) An owner of an Atlantic herring vessel required to have monitoring under paragraph (m)(3) of this section must arrange for monitoring by an individual certified through training classes operated by the NMFS/FSB and from a monitoring service provider approved by NMFS under paragraph (h) of this section. The owner, operator, or vessel manager of a vessel selected for monitoring must contact a monitoring service provider prior to the beginning of the trip and the monitoring service provider will notify the vessel owner, operator, or manager whether monitoring is available. A list of approved monitoring service providers shall be posted on the NMFS/FSB website: <https://www.fisheries.noaa.gov/resource/data/observer-providers-northeast-and-mid-atlantic-programs>.

* * * * *

■ 4. In § 648.14, add paragraphs (r)(1)(vi)(H) and (I) to read as follows:

§ 648.14 Prohibitions.

* * * * *

(r) * * *

(1) * * *

(vi) * * *

(H) Use, deploy, or fish with midwater trawl gear within the inshore midwater trawl restricted area as defined in § 648.202(a)(2), unless the vessel is on a declared research set-aside trip and operating as authorized by an exempted fishing permit or the vessel has not been issued a valid, federal permit under this part and fishes exclusively in state waters.

(I) Transit the inshore midwater trawl restricted area, defined in § 648.202(a)(2), with midwater trawl gear onboard unless midwater trawl gear is stowed and not available for immediate use, as defined in § 648.2 or the vessel has not been issued a valid, federal permit under this part and fishes exclusively in state waters.

* * * * *

■ 5. In § 648.200, revise paragraphs (b)(1), (2), and (3) to read as follows:

§ 648.200 Specifications.

* * * * *

(b) * * *

(1) OFL must be equal to catch resulting from applying the maximum fishing mortality threshold to a current or projected estimate of stock size. When the stock is not overfished and overfishing is not occurring, this is the fishing rate supporting maximum sustainable yield (e.g., F_{MSY} or proxy). Catch that exceeds this amount would result in overfishing. The stock is considered overfished if stock biomass is less than 1/2 the stock biomass associated with the MSY level or its proxy (e.g., SSB_{MSY} or proxy). The stock is considered subject to overfishing if the fishing mortality rate exceeds the fishing mortality rate associated with the MSY level or its proxy (e.g., F_{MSY} or proxy).

(2) ABC must be less than the OFL. The Council's Scientific and Statistical Committee (SSC) shall recommend ABC to the Council by applying the ABC control rule and considering scientific

uncertainty. Scientific uncertainty, including, but not limited to, uncertainty around stock size estimates, variability around estimates of recruitment, and consideration of ecosystem issues, shall be considered when setting ABC.

(3) ACL must be equal to or less than the ABC. Management uncertainty, which includes, but is not limited to, expected catch of herring in the New Brunswick weir fishery and the uncertainty around discard estimates of herring caught in Federal and state waters, shall be considered when setting the ACL. Catch in excess of the ACL shall trigger accountability measures (AMs), as described in § 648.201(a).

* * * * *

■ 6. In § 648.202, revise paragraph (a) to read as follows:

§ 648.202 Season and area restrictions.

(a) *Midwater Trawl Restricted Areas.*

(1) *Area 1A.* Federally permitted vessels fishing for Atlantic herring may not use, deploy, or fish with midwater trawl gear in Area 1A from June 1 September 30 of each fishing year. A vessel with midwater trawl gear on board may

transit Area 1A from June 1–September 30, provided such midwater trawl gear is stowed and not available for immediate use as defined in § 648.2. Vessels may use any authorized gear type to harvest herring in Area 1A from October 1–May 31.

(2) *Inshore.* Federally permitted vessels may not use, deploy, or fish with midwater trawl gear within the inshore midwater trawl restricted area. A federally permitted vessel with midwater trawl gear on board may transit the inshore midwater trawl restricted area, provided such midwater trawl gear is stowed and not available for immediate use as defined in § 648.2. Vessels on a declared research set-aside trip are permitted to use, deploy, or fish with midwater trawl gear within the inshore midwater trawl restricted areas provided the vessel is operating as authorized by an exempted fishing permit. The Inshore Midwater Trawl Restricted Area includes all state and federal waters between the US coastline and the following points, connected in the order listed by straight lines, unless otherwise noted:

TABLE 1 TO PARAGRAPH (a)(2)

Point	Latitude	Longitude	Note
IMT1	44° 17.986' N	67° 5.503' W	1 2
IMT2	42° 00.00' N	69° 43.474' W	2 3
IMT3	42° 00.00' N	69° 30.00' W
IMT4	41° 00.00' N	69° 30.00' W
IMT5	41° 00.00' N	70° 00.00' W
IMT6	41° 2.339' N	70° 00.00' W	4 5
IMT7	40° 50.637' N	71° 51.00' W	5 6
IMT8	41° 18.503' N	71° 51.00' W	7

¹ Point IMT1 represents the intersection of the U.S./Canada Maritime Boundary and the 12 nautical mile (nmi) Territorial Sea boundary.

² From Point IMT1 to Point IMT2 following the 12 nmi Territorial Sea boundary.

³ Point IMT2 represents the intersection of the 12 nmi Territorial Sea boundary and 42°00' N lat.

⁴ Point IMT6 represents the intersection of 70°00' W long. and the 12 nmi Territorial Sea boundary.

⁵ From Point IMT6 to Point IMT7 following the 12 nmi Territorial Sea Boundary.

⁶ Point IMT7 represents the intersection of 71°51' W long. and the 12 nmi Territorial Sea boundary.

⁷ Point IMT8 represents the intersection of 71°51' W long. and the coastline of Watch Hill, RI.

* * * * *

■ 7. In § 648.206, revise paragraphs (b)(3), (b)(37) and (b)(38) and add paragraph (b)(39) to read as follows:

§ 648.206 Framework provisions.

* * * * *

(b) * * *

(3) Closed areas, including midwater trawl restricted areas, other than spawning closures;

* * * * *

(37) River herring and shad Catch Cap Areas and Catch Cap Closure Areas;

(38) Modifications to the ABC control rule, including, but not limited to, control rule parameters, if a quantitative stock assessment is not available, if the

projections are producing ABCs that are not justified or consistent with available information, or if the stock requires a rebuilding program; and

(39) Any other measure currently included in the FMP.

* * * * *

[FR Doc. 2020–29127 Filed 1–8–21; 8:45 am]

BILLING CODE 3510–22–P

Atlantic States Marine Fisheries Commission

Executive Committee

February 3, 2021

8:00 – 10:00 a.m.

Webinar

Draft Agenda

The order in which these items will be taken is subject to change;
other items may be added as necessary.

1. Welcome/Introductions (*P. Keliher*)
2. Committee Consent
 - Approval of Agenda
 - Approval of Meeting Summary from October 2020
3. Public Comment
4. Update on Second Round of CARES Act Assistance (*R. Beal*)
5. Legislative & Appropriations Update (*R. Beal*)
6. Future Annual Meetings Update (*L. Leach*)
7. Other Business/Adjourn

**MEETING SUMMARY OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
EXECUTIVE COMMITTEE**

**Virtual via GoToMeeting
Arlington, VA
October 21, 2020**

INDEX OF MOTIONS

- 1. Approval of Agenda by Consent. (Page 2)**
- 2. Approval of Meeting Summary from August 5, 2020 by Consent. (Page 2)**
- 3. “On behalf of the AOC, move acceptance of the FY20 Audit as presented.” (Mr. Woodward on behalf of the AOC) Motion passed unanimously. (Page 2)**
- 4. Adjournment by Consent (Page 2)**

ATTENDANCE

Committee Members

Pat Keliher, ME	Roy Miller, DE (GA Chair)
Cheri Patterson, NH	Kris Kuhn, PA
Dennis Abbott, NH (LA Chair)	Bill Anderson, MD
Dan McKiernan, MA	Steve Bowman, VA
Jason McNamee, RI	Chris Batsavage, proxy for Steve Murphey, NC
Maureen Davidson, proxy for Jim Gilmore, NY	Mel Bell, proxy for Phil Maier, SC
Joe Cimino, NJ	Spud Woodward, GA
John Clark, DE	Jim Estes, FL

Other Commissioners/Proxies

Thad Altman, FL (LA)	Nichola Meserve, MA DMF
Doug Haymans, GA (AA)	Eric Reid, RI (LA Proxy)
Raymond Kane, MA (GA)	Malcolm Rhodes, SC (GA)
Mike Luisi, MD DNR	Ritchie White, NH (GA)

Staff

Bob Beal	Geoff White
Laura Leach	Max Appelman
Tina Berger	Jeff Kipp
Pat Campfield	Sarah Murray
Toni Kerns	Deke Tompkins

Others

Alan Bianchi

Alison Colden

Monty Deihl

Sheila Eyster, USFWS

Cynthia Ferrio

Pat Geer, VMRC

Zoe Goozner, Pew Trusts

Zach Greenberg, Pew Trusts

Melanie Griffin

Shanna Madsen, VMRC

Mike Millard, USFWS

Chris Moore, CBF

Allison Murphy, NOAA

Derek Orner, NOAA Fisheries

Rich Pendleton

Nicholas Popoff, USFWS

Jill Ramsey, VMRC

Alexi Sharov, MD DNR

Melissa Smith

Helen Takade-Heumacher, USFWS

Sherry White, USFWS

Chris Wright, NOAA

Renee Zobel, NHF&G

CALL TO ORDER

The Executive Committee of the Atlantic States Marine Fisheries Commission convened virtually via a GoToMeeting webinar October 21 2020. The meeting was called to order at 8:02 a.m. by Chair Pat Keliher.

APPROVAL OF AGENDA

The agenda was approved, with the addition of a question regarding the Law Enforcement Committee.

APPROVAL OF PROCEEDINGS

The summary minutes from the August 5, 2020 meeting were approved as presented.

PUBLIC COMMENT

There was no public comment.

REPORT OF THE ADMINISTRATIVE OVERSIGHT COMMITTEE

Mr. Woodward presented the report of the Administrative Oversight Committee (AOC) who met via conference call in advance of the Annual Meeting. The AOC reviewed the draft FY20 Audit and forwarded it to the Executive Committee with the following motion: **On behalf of the Administrative Oversight Committee, move acceptance of the FY20 Audit.** Motion by Spud Woodward. Motion passed unanimously.

MSC RECOMMENDATIONS REGARDING PUBLIC INPUT PROCESS

Staff provided a progress update on its activities to improve the Commission's public input and advisory panel processes. Recent efforts have focused on the public input portion of staff's charge, including posting presentations on documents

currently out for public comment on the Commission's YouTube channel and webpage (e.g. Black Sea Bass Draft Addendum XXXIII) to increase the opportunities available to stakeholders to understand the issues and submit public comment. Staff is also working on developing a draft survey as a template to be used to solicit public input on draft management documents. The survey is still under development and will be shared with ISFMP staff to get further input before the survey is presented to the Executive Committee for its review. The survey is a "bare bones" approach, essentially converting the draft addendum language into a simple survey. Based on direction from the Executive Committee, staff will also review the Commission's current public comment guidelines to see whether any changes need to be made as Board meetings and public hearings have moved to a webinar format. Staff continues to explore ways to improve the advisory panel process, including possibly combining advisory panels to improve engagement; establishing an overarching advisory panel, composed of diverse user groups, gear types and geographic scope to provide advice on fisheries management issues across the board; and finding ways to better utilize state advisory groups. Longer term efforts to improve both processes include creating more public-friendly management documents and educational materials regarding the Commission's fisheries management process.

CARES ACT UPDATE

Mr. Beal provided an updated on the status of state spending plans and the distribution of CARES Act fishery disaster funds. Details were provided on the direction from NOAA Fisheries on how the states and potential

recipients should calculate revenue lost and determine if the federal assistance will make them “more than whole”. States were also updated on the information Commission staff would need in order to distribute payments as well as data states would need to provide to support a future audit.

ANNUAL MEETINGS UPDATE

Mrs. Leach reported the 80th Annual Meeting will be conducted in Long Branch, New Jersey in October 2021. Following meetings will be held: 2022: North Carolina; 2023 – Maryland; and 2024 – Delaware.

PENNSYLVANIA’S MEMBERSHIP ON NON-DIADROMOUS BOARDS

Mr. Beal gave an update on the status of the Pennsylvania’s membership on the Atlantic Menhaden Management Board. Mr. Beal and the Commission’s legal counsel Sean Donahue, is drafting a memo with regard to Pennsylvania’s membership that reviews the Commission’s guiding documents and provides a recommended plan future participation by the Commonwealth. A

question was raised regarding the legal defensibility of allowing Pennsylvania to continue to participate on the Board. Staff responded that the memo will detail any potential risks. The Committee also discussed the need to have the ISFMP Policy Board make the final decision on this issue given its role in determining which states have a declared interest in each species.

OTHER BUSINESS

Dr. McNamee inquired about the status of a coordinator for the Law Enforcement Committee and Mr. Beal noted that one would be hired.

Mr. Cimino asked about the requirement for NOAA Standard Terms & Conditions be provided to and adhered by all fisheries participants receiving CARES Act funds. Mrs. Leach found that to be incorrect information.

ADJOURN

The Executive Committee adjourned at 8:48 a.m.

Atlantic States Marine Fisheries Commission

Coastal Sharks Management Board

February 3, 2021
10:15 – 11:00 a.m.
Webinar

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

- | | |
|--|------------|
| 1. Welcome/Call to Order (<i>C. Batsavage</i>) | 10:15 a.m. |
| 2. Board Consent | 10:15 a.m. |
| • Approval of Agenda | |
| • Approval of Proceedings from February 2020 | |
| 3. Public Comment | 10:20 a.m. |
| 4. Review NOAA Fisheries Cooperative Shark Tagging Program
(<i>C. McCandless</i>) | 10:30 a.m. |
| 5. Update from NOAA Fisheries on Highly Migratory Species Management
(<i>K. Brewster-Geisz</i>) | 10:45 a.m. |
| 6. Review and Populate Advisory Panel Membership (<i>T. Berger</i>) Action | 10:55 a.m. |
| 7. Other Business/Adjourn | 11:00 a.m. |

MEETING OVERVIEW

Coastal Sharks Management Board

Wednesday, February 3, 2021

10:15 – 11:00 a.m.

Webinar

Chair: Chris Batsavage (NC) Assumed Chairmanship: 05/19	Technical Committee Chair: Angel Willey (MD)	Law Enforcement Committee Representative: Greg Garner (SC)
Vice Chair: Mel Bell (SC)	Advisory Panel Chair: Vacant	Previous Board Meeting: February 4, 2020
Voting Members: MA, RI, CT, NY, NJ, DE, MD, VA, NC, SC, GA, FL, NMFS (13 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from February 2020

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Review NOAA Fisheries Cooperative Shark Tagging Program (10:30-10:45 a.m.)

Background

- The Cooperative Shark Tagging Program (CSTP) is a collaborative effort between recreational anglers, commercial fishery, and NOAA Fisheries to learn more about the life history of Atlantic Sharks.
- Over the last year there has been an increase in recreational shark fishing from shore due to the COVID-19 pandemic. With increased shore-based fishing effort, there is an opportunity for more educational outreach and data collection through the CSTP.

Presentations

- Review of Cooperative Shark Tagging Program by C. McCandless

5. Update from NOAA Fisheries on Highly Migratory Species Management (10:45-10:55 a.m.)

Background

- NOAA's Highly Migratory Species (HMS) Division has been working on a number of items that may impact the management of sharks found in state waters. HMS staff will review Draft Amendment 14, the recent Atlantic Blacktip Assessment, and Depredation.

Presentations

- Update from NOAA Fisheries on HMS Management by K. Brewster-Geisz

6. Review and Populate Advisory Panel Membership (10:55-11:00 a.m.) Action

Background

- Rick Bellavance from RI has been nominated to the Coastal Sharks Advisory Panel **(Briefing Materials)**.

Presentations

- Nominations by T. Berger

Board actions for consideration at this meeting

- Approve nominations

7. Other Business/Adjourn

Coastal Sharks

Activity level: Low

Committee Overlap Score: low (some overlap with South Atlantic Board species)

Committee Task List

- TC – August 1st: Annual compliance reports due

TC Members: Angel Willey (MD, Chair), Bryan Frazier (SC), Donna McDowell (GA), Brent Winner (FL), Greg Skomal (MA), Chris Scott (NY), David Behringer (NC), Conor McManus (RI), Greg Hinks (NJ), Jack Musick (VIMS), Matt Gates (CT), Karyl Brewster-Geisz (NOAA), Michael Frisk (NY), Enric Cortes (NOAA), Scott Newlin (DE), Julie Neer (SAFMC), Kirby Rootes-Murdy (ASMFC)

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
COASTAL SHARKS MANAGEMENT BOARD**

The Westin Crystal City
Arlington, Virginia
February 4, 2020

These minutes are draft and subject to approval by Coastal Sharks Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the Coastal Sharks Management Board Meeting
February 2020

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These minutes are draft and subject to approval by the Coastal Sharks Management Board.
The Board will review the minutes during its next meeting.

INDEX OF MOTIONS

1. **Approval of agenda** by consent (Page 1).
2. **Approval of Proceedings of October 2019** by consent (Page 1).
3. **Motion to adjourn** by consent (Page 3).

Draft Proceedings of the Coastal Sharks Management Board Meeting
February 2020

ATTENDANCE

Board Members

Dan McKiernan, MA (AA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Mike Luisi, MD, proxy for B. Anderson (AA)
Jason McNamee, RI (AA)	Phil Langley, MD, proxy for Del. Stein (LA)
Matt Gates, CT, proxy for J. Davis (AA)	Lewis Gillingham, VA, proxy for S. Bowman (AA)
Bill Hyatt, CT (GA)	Chris Batsavage, NC, proxy for S. Murphey (AA)
Jim Gilmore, NY (AA)	Mel Bell, SC, proxy for R. Boyles (AA)
Joe Cimino, NJ (AA)	Doug Haymans, GA (AA)
Russ Allen, NJ, proxy for T. Fote (GA)	Spud Woodward, GA (GA)
Stewart Michels, DE, proxy for D. Saveikis (AA)	Jim Estes, FL, proxy for J. McCawley (AA)
Roy Miller, DE (GA)	Guy DuBeck, NMFS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Staff

Robert Beal	Kirby Rootes-Murdy
Toni Kerns	Maya Drzewicki

Guests

Carl Lobue, TNC	Nichola Meserve, MA DMF
Alejandra Goyenechea, Defenders of Wildlife	Lowell Whitney, USFWS
Michelle Turton, US FWS	Laura Noguchi, CITES

These minutes are draft and subject to approval by Coastal Sharks Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the Coastal Sharks Management Board Meeting
February 2020

The Coastal Sharks Management Board of the Atlantic States Marine Fisheries Commission convened in the Jefferson Ballroom of the Westin Crystal City Hotel, Arlington, Virginia; Tuesday, February 4, 2020, and was called to order at 3:15 o'clock p.m. by Chair Chris Batsavage.

CALL TO ORDER

CHAIR CHRIS BATSAVAGE: Okay we'll go ahead and get started. Welcome everyone to the Coastal Sharks Management Board. My name is Chris Batsavage; I'm the Administrative Proxy for North Carolina. I'll be serving as Chair. Along with me is staff lead for ASMFC on coastal sharks, Kirby Rootes-Murdy.

APPROVAL OF AGENDA

CHAIR BATSAVAGE: We'll start by approval of the agenda. Are there any changes to the agenda? Seeing none, we'll approve that by consent.

APPROVAL OF PROCEEDINGS

CHAIR BATSAVAGE: Next is approval of the proceedings from the October 2019 Board meeting. Are there any changes or modification to those proceedings? Seeing none, then those are approved. Next is public comment on any items that are not on the agenda today for coastal sharks. Nobody signed up in advance, are there any members of the public who would wish to provide any comment?

**UPDATE ON THE IMPLEMENTATION OF CITES
APPENDIX II PROVISIONS FOR ATLANTIC
SHORT FIN MAKO SHARKS**

CHAIR BATSAVAGE: Seeing none, then we'll move on to the next item, which is an update on the implementation of CITES Appendix II Provisions for Atlantic Short Fin Mako Sharks, and with us today from the U.S. Fish and Wildlife Service we have Michelle Turton and Laura Noguchi to go over that for us. With that I'll hand it over to them.

MS. MICHELLE TURTON: Hello, I'm Michelle Turton with U.S. Fish and Wildlife Service. I'm a permits biologist with International Affairs.

MS. LAURA NOGUCHI: Laura Noguchi, I work in the Scientific Management Authority for CITES, also in International Affairs.

MS. TURTON: Today I'll be talking about the implementation of CITES for the Atlantic shortfin mako shark. The Convention of International Trade in Endangered Species of Wild Fauna and Flora, I'll just say CITES is an agreement between 182 member countries, also referred to as parties and the EU.

The U.S. has been a party member since CITES went into effect in 1975. It establishes a legal framework, together with common procedural mechanisms, for regulating international trade and listed species. The purpose of CITES is to ensure that international trade in wild fauna and flora is legal and sustainable. How does CITES exactly work? It's by regulating the export, the import, and interjectory from the sea of live and dead animal, plants, and their parts. It's for only listed species, so it doesn't cover every species in the world. It's mainly targeted in international trade. It is regulated based on a system of permitting and certifications that can only be issued if certain criteria's are met, and must be presented when leaving or entering a country or a member party.

For CITES there are three appendixes, Addition of a Species to Appendix I or Appendix II requires two-thirds majority vote of all the parties. Addition of a Species to Appendix III is an un-unilateral decision by listing country. A little bit more detail about the three appendices. Appendix I is roughly around 1,000 species.

These are species that are threatened with extinction. There is no commercial trade allowed. It requires both an import permit and

These minutes are draft and subject to approval by the Coastal Sharks Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the Coastal Sharks Management Board Meeting
February 2020

an export permit. Appendix II is the largest group. There are over 30,000 species listed. The majority of that is plant species. These species are vulnerable to overexploitation, but they are not currently at risk for extinction.

There is commercial and noncommercial trade allowed in these listed species. Permits and certificates are required for export, but they are not always required for import. It depends on national law that a party may set up, such as the European Union typically requires an import for an Appendix II.

Then there are Appendix III specimens. There are roughly around 300 species listed. The purpose is to address legal origin, and not necessarily sustainability. These species are protected by at least one country that has requested assistance in helping to regulate those species. In order for a permit to be issued there are two findings that are required, there is a Legal Acquisition, and that finding is done by the Division of Management Authority.

That specimen to be exported has to be legally acquired. The other finding that is necessary for CITES is a non-detrimental finding, sometimes referred to as an NDF. That is done by the Division of Scientific Authority, and the export of the specimen will not impact negatively on the survival of the species in the wild.

CITES enforcement, there are inspections of wildlife for shipments; there is legal action, investigation, law enforcement intelligence working on undercover cases, national and international collaboration. But the main goal is to promote compliance, now to talk specifically about mako sharks.

At the 18th meeting of the Conference of Parties that took place in Switzerland on August 17 through the 28th of 2019, it was proposed by the countries listed on the screen, I'm not going to read off all of those party members,

because there are a large number of them. They proposed for mako sharks to be listed as an Appendix II item, and that includes both the shortfin and the longfin mako sharks.

It was voted by the party members and accepted that proposal to list mako sharks as an Appendix II. That came into effect on November 26, 2019. What are the requirements now that that has come into effect is that for international trade you will need a U.S. CITES Export Permit to export it internationally. In order to acquire that permit you can submit Application 3-200-27. That is a permit for export of wildlife taken from the wild. There is \$100.00 processing fee. If the permit is issued it is valid for six months, and you may or may not need a CITES import certificate. Again that depends on the different party members, and if they have a national law saying that you need an import.

If you were to import mako sharks to the United States you would not need a U.S. CITES permit, but you would require a foreign CITES Export Permit. For domestic trade of mako sharks you do not need a CITES permit. Then if mako sharks are caught on the high seas that is outside of the EEZ Zone for the U.S. you will need this certificate. It's a CITES Introductory to the Sea Certificate.

It will be Application Form 3-200-31. There is \$100.00 processing fee, and this Introductory to Sea Certificate is valid for one year. It should be noted, unlike the (Application 3-200) 27 for an export permit, which would be a single-time use; the Introductory to Sea Certificate will be valid for multiple uses, so you won't need to apply for multiple ones within that year. When can mako shark listing as an Appendix II be revisited?

That would be at a Conference of Party. The next one will be in Costa Rica in 2022. That is when there can be changes to up-list or delist species. A member party must propose it, and

These minutes are draft and subject to approval by the Coastal Sharks Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the Coastal Sharks Management Board Meeting
February 2020

it requires the support of two-thirds of the parties present and voting. That is my presentation. If you have additional questions feel free to give our telephone number a call, and also our e-mail address is also listed up there, which this can be shared with your constituents as well.

CHAIR BATSAVAGE: Thank you for the presentation, are there questions for Michelle? I guess you covered everything that you needed to so it's good. If no further questions, thank you for the presentation and I guess we'll see what happens when this comes back up maybe in 2022, so thanks again. Next on the agenda is an update from the November, 2019 ICCAT Meeting, and Kirby is going to give a quick update on that.

MR. KIRBY ROOTES-MURDY: Hi, I have a very brief one-slide presentation. Basically with shortfin mako, at the 2019 ICCAT Meeting it is important to note that the U.S. advanced the measure to generally prohibit retention, while allowing limited landings under a total allowable catch if member nations reduced their mortality of shortfin mako by 80 percent.

That is the needed mortality reduction. The U.S. had already achieved this reduction through Amendment 11. During that meeting there was a report out from the Standing Committee on Research and Science that updated projections regarding basically two life generations, as opposed to one mean generation time that was included in the benchmark assessment.

Based on those updated projections, the member countries decided not to make any additional changes at this point to those measures. NOAA Fisheries is looking into what regulations other countries have implemented, and the plan as of right now is there will be no changes to the shortfin mako measures that NOAA has implemented.

The next step would be the 2020 ICCAT Meeting, at which point the discussion around whether to make any further change would come up at that point, so that would be November of this year. That is it in a nutshell. If you have any questions let me know. We also have Guy DuBeck, he was another kind federal partner who stuck around for this delayed meeting, and he's here and can answer some questions that I may not be able to regarding shortfin makos, so thank you.

CHAIR BATSAVAGE: Questions for Kirby or for Guy regarding the ICCAT update. I've got a question from a member of the public, if you can come on up please to one of the public microphones and state your name and any affiliation.

MS. ALEJANDRA GOYENECHEA: My name is Alejandra Goyenechea, Senior International Council for Defenders of Wildlife. I just wanted to mention that I was present at the Annual Meeting, so if you have any questions or need more information at what happened at the November meeting, I was there so feel free to contact me. Thank you.

ADJOURNMENT

CHAIR BATSAVAGE: Thank you. Are there any questions from the Board? Okay, is there any other business from the Board? If there are no objections then we are adjourned.

(Whereupon the meeting adjourned at 3:30 o'clock p.m. on February 4, 2020)

These minutes are draft and subject to approval by the Coastal Sharks Management Board.
The Board will review the minutes during its next meeting.



Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201
703.842.0740 • 703.842.0741 (fax) • www.asmf.org

MEMORANDUM

January 12, 2021

To: Coastal Sharks Management Board
From: Tina Berger, Director of Communications
RE: Advisory Panel Nomination

Please find attached a new nomination to the Coastal Sharks Advisory Panel – Captain Rick Bellavance, a commercial rod and reel fisherman and charter/partyboat captain from Rhode Island. Please review this nomination for action at the next Board meeting.

If you have any questions, please feel free to contact me at (703) 842-0749 or tberger@asmfc.org.

Enc.

cc: Kirby Rootes-Murdy

M21-08

COASTAL SHARKS ADVISORY PANEL

Bolded names await approval by the Coastal Sharks Management Board

January 12, 2021

Rhode Island (2)

Stephen C. Segerson (rec)
37 Myrna Road
Warwick, RI 02818
Phone (day): 401.467.3143 ext. 108
Phone (eve): 401.439.5349
FAX: 401.941.2453
Email: ssegerson@etco.com
Appt. Confirmed 2/20/06
Appt Reconfirmed 5/10

Captain Rick Bellavance (commercial rod and reel/for-hire)

140 Jerry Lane
North Kingstown, RI 02852
Phone: 401.741.5648
rickbellavance@gmail.com

New York (2)

Steve Witthuhn (charterboat)
118 Kenneth Ave.
Greenlawn, NY 11740
Tel. 631.368.1315
Appt. Confirmed 2/20/06
Appt Reconfirmed 5/10

Charles Witek (comm)
1075 Tooker Avenue
West Babylon, NY 11704-5047
Phone: 212.412.6707
Cell: 631.587.2211
charleswitek@gmail.com
Appt Confirmed 10/24/16

New Jersey (2)

Marty Buzas (comm./longline & gillnet)
558 Shunpike Road
Cape May Courthouse, NJ 08210
Phone (day): 609.827.2626
Phone (eve): 609.465.5776
Email: MBEileenB@yahoo.com
Appt. Confirmed 5/19/06
Appt Reconfirmed 5/17/10

Peter Grimbilas (rec/for-hire)
3 Oakwood Court
Towaco, NJ 07082
Phone (day): 973.696.1200
Phone (eve): 973.454.0315
FAX: 973.696.1411
Email: peterg@njoutdooralliance.org
Appt Confirmed 8/3/10

Delaware (2)

Daniel T. Dugan (rec)
20 South Woodward Avenue
Wilmington, DE 19805
Phone: 302.636.9300
Email: dugan@delanet.com
Appt. Confirmed 2/20/06
Appt Reconfirmed 5/10

1 Vacancy – commercial or for-hire

Maryland (2)

Mark Sampson (for-hire)
10418 Exeter Road
Ocean City, MD 21842
Phone (home): 410.213.2442
Phone (cell): 410.726.7946
SharkQuest2@gmail.com
Appt Confirmed 8/3/10

Vacancy – comm gillnet/pots

Virginia (2)

Ernest L. Bowden Jr. (comm./gillnet)
4219 School Street
Chincoteague, VA 23336
Phone (day): 757.894.1243
Phone (eve): 757.336.5792
Appt. Confirmed 2/20/06
Appt Reconfirmed 5/10

Vacancy – recreational

North Carolina (2)

Dewey Hemilright (comm./longline & gillnet)
P.O. Box 667
Wanchese NC 27981
Phone: 252.473.0135
Email: FVTARBABY@embargo.com
Appt. Confirmed 5/19/06
Appt Reconfirmed 5/10; 8/18

1 Vacancy – for-hire or recreational

South Carolina (2)

Terry Annibale (comm)
1511 Holly Drive
North Myrtle Beach, SC 29582
Phone: 843.224.2104
Email: Capt-terry@hotmail.com
Appt Confirmed 8/3/10

Reese (Chip) Michalove (charterboat)
PO Box 6257
Hilton Head Island, SC 29938
Phone: 843.290.0371
Email: outcastfishing@yahoo.com
Appt Confirmed 8/3/10

Georgia (2)

Capt. Greg Hildreth (charterboat/rec)
477 Midway Circle
Brunswick, GA 31523
Phone: 912.261.1763
Email: hildrethcharters@bellsouth.net
Appt. Confirmed 2/20/06
Appt Reconfirmed 5/10

1 Vacancy – commercial

Florida (2)

Russell Howard Hudson (comm. hook & line/for-hire captain)
1045 West International Speedway Boulevard
Daytona Beach, FL 32114
Phone (home): 386.239.0948
Phone (cell): 386.253.2843
FAX: 386.253.2843
Email: DSF2009@aol.com
Appt. Confirmed 5/19/06
Appt Reconfirmed 4/22/10

1 Vacancy – recreational

Non-Traditional Stakeholders (2)

Sonja Fordham
Shark Advocates International
Rue Franz Merjay, 14
1050 Brussels
Belgium
+32 495 101468
Email: sonja@sharkadvocates.org

OR

The Ocean Foundation
1990 M Street, NW, Suite 250
Washington, DC 20036
Phone: 202.436.1468
Email: sonjaviveka@gmail.com
Appt. Confirmed 5/19/06

Katie Westfall
1875 Connecticut Avenue, NW
Washington, DC 20009
Phone (day): 202.572.3376
Phone (eve): 202.607.6775
kwestfall@edf.org
Appt Confirmed 8/2/16

RI Party and Charter Boat Association

Commercial Fishing Center of RI

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

STB, BLU, BSB, SCUP, SF

Spiny Dogfish, HMS, Tautog

Cod, Pollack, Hake, WF

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

STB, BLU, BSB, SCUP, SF

Spiny Dogfish, HMS, Tautog

Cod, Pollack, Hake, WF

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business? 30 years

2. Is the nominee employed only in commercial fishing? yes _____ no X

3. What is the predominant gear type used by the nominee? Rod and Reel

4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)? Inshore and offshore from Montauk NY to Marthas Vineyard MA out to 50 miles

FOR CHARTER/HEADBOAT CAPTAINS:

1. How long has the nominee been employed in the charter/headboat business? 30 years

2. Is the nominee employed only in the charter/headboat industry? yes _____ no X

If "no," please list other type(s) of business(es) and/occupation(s): _____

Fishing Consultant - Member New England Fishery Management Council

3. How many years has the nominee lived in the home port community? 53 years

If less than five years, please indicate the nominee's previous home port community.

FOR RECREATIONAL FISHERMEN:

1. How long has the nominee engaged in recreational fishing? _____ years
2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? yes _____ no _____

If "yes," please explain.

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing? _____ years
2. Is the nominee employed only in the business of seafood processing/dealing?
yes _____ no _____ If "no," please list other type(s) of business(es) and/or occupation(s):

3. How many years has the nominee lived in the home port community? _____ years
If less than five years, please indicate the nominee's previous home port community.

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? _____ years
2. Is the nominee employed in the fishing business or the field of fisheries management?
yes _____ no _____
If "no," please list other type(s) of business(es) and/or occupation(s):

FOR ALL NOMINEES:

In the space provided below, please provide the Commission with any additional information which you feel would assist us in making choosing new Advisors. You may use as many pages as needed.

Spiny Dog fish and Coastal SHarks are important to RI's charter/PARTY and commercial fishing industry. As someone who participates in these fisheries and As someone who is familiar with the commission's management process I feel I can be helpful to the AP. I understand the commitment necessary to be an AP member and I can meet that commitment.

Nominee Signature:  _____

Date: 1/6/2021

Name: **Rick Bellavance**

(please print)

COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)

State Director

State Legislator

Governor's Appointee

Atlantic States Marine Fisheries Commission

Atlantic Coastal Cooperative Statistics Program Coordinating Council

*February 3, 2021
11:15 am - 12:15 pm
Web Conference*

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order (*J. Carmichael*)
2. Council Consent
 - Approval of Agenda
 - Approval of Minutes from October 2020
3. Public Comment
4. Review Program and Project Funding (*G. White*)
5. Other Business/Adjourn

Atlantic States Marine Fisheries Commission

Atlantic Striped Bass Management Board

February 3, 2021
1:45 p.m. – 5:00 p.m.
Webinar

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

- | | |
|--|-----------|
| 1. Welcome/Call to Order (<i>D. Borden</i>) | 1:45 p.m. |
| 2. Board Consent | 1:45 p.m. |
| • Approval of Agenda | |
| • Approval of Proceedings from October 2020 | |
| 3. Public Comment | 1:50 p.m. |
| 4. Review Technical Committee Report on Release Mortality Sensitivity Runs (<i>K. Sullivan</i>) | 2:00 p.m. |
| 5. Consider Stock Assessment Update Timeline (<i>K. Drew</i>) Action | 2:20 p.m. |
| 6. Discuss Circle Hook Implementation (<i>T. Kerns</i>) Possible Final Action | 2:35 p.m. |
| 7. Consider Draft Amendment 7 Public Information Document for Public Comment (<i>T. Kerns</i>) Action | 3:35 p.m. |
| 8. Review and Populate Advisory Panel Membership (<i>T. Berger</i>) Action | 4:55 p.m. |
| 9. Other Business/Adjourn | 5:00 p.m. |

MEETING OVERVIEW

Atlantic Striped Bass Management Board
Wednesday, February 3, 2021
1:45 p.m. – 5:00 p.m.
Webinar

Chair: David Borden (RI) Assumed Chairmanship: 02/20	Technical Committee Chair: Kevin Sullivan (NH)	Law Enforcement Committee Rep: Kurt Blanchard (RI)
Vice Chair: Martin Gary (PRFC)	Advisory Panel Chair: Louis Bassano (NJ)	Previous Board Meeting: October 21, 2020
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, DC, PRFC, VA, NC, NMFS, USFWS (16 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from October 2020

3. Public Comment – At the beginning of the meeting, public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance, the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Review Technical Committee Report on Release Mortality Sensitivity Runs (2:00 – 2:20 p.m.)

Background

- The Technical Committee (TC) estimates that 9% of all recreationally caught striped bass that are released alive die as a result of that fishing interaction, commonly referred to as release mortality or discard mortality.
- At their October 2020 meeting, the Board reviewed a TC report on release mortality that highlighted how recreational release mortality is calculated for stock assessments, the data and modeling factors limiting the accuracy of those estimates, as well as potential management actions the Board could pursue to reduce release mortality in the fishery.
- Following review, the Board tasked the TC to explore the relative impact of different release mortality rate estimates on stock status (**Briefing Materials**).

Presentations

- TC report by K. Sullivan

5. Consider Stock Assessment Update Timeline (2:20 – 2:35 p.m.) Action

Background

- The next striped bass stock assessment update is scheduled for 2021.
- 2020 is the first year that Addendum VI measures were implemented and 2020 recreational catch data and 2020 state survey data may be highly uncertain due to impacts from COVID-19.

Presentations

- Update by K. Drew

Board Actions for Consideration

- Recommend postponing the next striped bass stock assessment update to 2022 or later.

6. Discuss Circle Hook Implementation (2:35 – 3:35 p.m.) Possible Final Action

Background

- The Commission and several states have received request to consider exemptions for tube rig gear (**Briefing Materials**).
- Addendum VI requires the mandatory use of circle hooks when fishing for striped bass with bait to reduce discard mortality in recreational striped bass fisheries.
- At their October 2020 meeting, the Board approved Addendum VI state implementation plans for circle hook requirements with the caveat that no exemptions to mandatory circle hook requirements will be permitted.
- Maine and Massachusetts are submitting a proposal to study the tube rig fishery for Board consideration. The proposal requests an exemption to the circle hook requirement for tube rig gear for the duration of a study that will collect information on the tube rig fishery, including the size of the fishing population that uses this terminal gear and where tube gear hooks on a fish (**Supplemental Materials**).

Presentations

- Update on circle hook correspondence and by T. Kerns and presentation of ME/MA proposal study by M. Ware

Board Actions for Consideration

- Consider approval of the Maine and Massachusetts proposal To Study the Tube Rig Fishery and Consider Its Exemption from the Circle Hook Provision

7. Consider Draft Amendment 7 Public Information Document for Public Comment (3:35 – 4:55 p.m.) Action

Background

- The status and understanding of the striped bass stock and fishery has changed considerably since implementation of Amendment 6 in 2003, which has raised concerns that the existing management program may no longer reflect current fishery needs and priorities.
- Accordingly, the Board initiated development of Draft Amendment 7 to consider addressing a number of important issues that have been facing striped bass management for a long time.
- The Plan Development Team developed the Draft Amendment 7 Public Information Document (PID) which is a broad scoping document intended to focus public input and inform development of the Draft Amendment.

- The Board reviewed the first draft of the PID at their October 2020 meeting and offered a number of edits, which have been incorporated into the updated draft PID (**Briefing Materials**).

Presentations

- Draft Amendment 7 Public Information Document by T. Kerns

Board Actions for Consideration

- Consider approving the PID for public comment

8. Review and Populate Advisory Panel Membership (4:55-5:00 p.m.) Action

Background

- There are three new nominations to the Atlantic Striped Bass Advisory Panel – Andrew Dangelo, with the RI for-hire industry; Michael Plaia, a RI commercial fisherman, recreational angler and for-hire operator; and Dennis Fleming, a commercial fisherman and recreational fishing guide representing the Potomac River Fisheries Commission (**Briefing Materials**).

Presentations

- Nominations by T. Berger

Board Actions for Consideration

- Approve Atlantic Striped Bass Advisory Panel nominations

9. Other Business/Adjourn

Atlantic Striped Bass

Activity level: High

Committee Overlap Score: Medium (TC/SAS/TSC overlaps with BERP, Atlantic menhaden, American eel, horseshoe crab, shad/river herring)

Committee Task List

- PDT – develop all documentation for the development of Draft Amendment 7
- SAS/TC – various tasks in response to the 2018 benchmark assessment and relating to development of Draft Amendment 7
- TC – June 15th: Annual compliance reports due

TC Members: Kevin Sullivan (NH, chair), Jason Boucher (DE, vice chair), Nicole Lengyel Costa (RI), Olivia Phillips (VA), Alexei Sharov (MD), Carol Hoffman (NY), Charlton Godwin (NC), Ellen Cosby (PRFC), Gail Wippelhauser (ME), Gary Nelson (MA), Brendan Harrison (NJ), Jeremy McCargo (NC), Kurt Gottschall (CT), Luke Lyon (DC), Bryan Chikotas (PA), Peter Schuhmann (UNCW), Gary Shepherd (NMFS), Steve Minkinen (USFWS), John Ellis (USFWS), Katie Drew (ASMFC), Emilie Franke (ASMFC)

SAS Members: Gary Nelson (MA), Alexei Sharov (MD), Hank Liao (ODU), Justin Davis (CT), Michael Celestino (NJ, Chair), John Sweka (USFWS), Gary Shepherd (NMFS), Katie Drew (ASMFC), Emilie Franke (ASMFC)

PDT Members: Nichola Meserve (MA), Nicole Lengyel Costa (RI), Brendan Harrison (NJ), Olivia Phillips (VA), Simon Brown (MD), Jason Boucher (DE), Derek Orner (NMFS), Greg Wojcik (CT), Emilie Franke (ASMFC)

Tagging Subcommittee (TSC) Members: Stuart Welsh (WVU, Chair), Heather Corbett (NJ, Vice Chair), Angela Giuliano (MD), Beth Versak (MD), Chris Bonzak (VIMS), Gary Nelson (MA), Ian Park (DE), Jessica Best (NY), Carol Hoffman (NY), Gary Shepherd (NMFS), Josh Newhard (USFWS), Wilson Laney (USFWS), Katie Drew (ASMFC), Emilie Franke (ASMFC)

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
ATLANTIC STRIPED BASS MANAGEMENT BOARD**

**Webinar
October 21, 2020**

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INDEX OF MOTIONS

1. **Approval of agenda** by consent (Page 1).
2. **Move to approve proceedings from August 2020** by consent (Page 1).
3. **Main Motion:**
Move to not exempt any state from putting in place the circle hook rules for bait fishing as specified in Addendum VI (Page 9). Motion by Tom Fote; second by Dennis Abbott.

Motion to substitute:
Move to substitute to approve the Addendum VI state implementation plans for circle hooks with the exception of the Massachusetts for-hire exemption (Page 10). Motion by Megan Ware, second by Justin Davis. Motion fails (Page 17).

Main Motion:
Move to not exempt any state from putting in place the circle hook rules for bait fishing as specified in Addendum VI. Motion carried (Page 19).
4. **Move to nominate to the Atlantic Striped Bass Advisory Panel Bob Danielson from New York** (Page 51). Motion by Maureen Davidson; second by Tom Fote. Motion carried (Page 51).

Draft Proceedings of the Atlantic Striped Bass Management Board Meeting Webinar
October 2020

ATTENDANCE

Board Members

Megan Ware, ME, proxy for P. Keliher (AA)	Kris Kuhn, PA, proxy for T. Schaeffer (AA)
Sen. David Miramant, ME (LA)	Loren Lustig, PA (GA)
Cheri Patterson, NH (AA)	John Clark, DE, proxy for D. Saveikis (AA)
Ritchie White, NH (GA)	Roy Miller, DE (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Craig Pugh, DE, proxy for Rep. Carson (LA)
Mike Armstrong, MA, proxy for D. McKiernan (AA)	Mike Luisi, MD, proxy for B. Anderson (AA)
Raymond Kane, MA (GA)	Russell Dize, MD (GA)
Jason McNamee, RI (AA)	Phil Langley, MD, proxy for Del. Stein (LA)
David Borden, RI (GA)	Pat Geer, VA, proxy for S. Bowman (AA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)	Bryan Plumlee, VA (GA)
Justin Davis, CT (AA)	Sen. Monty Mason, VA (LA)
Bill Hyatt, CT (GA)	Chris Batsavage, NC, proxy for S. Murphey (AA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)	Jerry Mannen, NC (GA)
Emerson Hasbrouck, NY (GA)	Bill Gorham, NC, Proxy for Sen. Steinburg (LA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)	Bryan King, DC
Joe Cimino, NJ (AA)	Marty Gary, PRFC
Tom Fote, NJ (GA)	Derek Orner, NMFS
Adam Nowalsky, NJ, proxy for Asm. Houghtaling (LA)	Mike Millard, USFWS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Kevin Sullivan, Technical Committee Chair	Kurt Blanchard, Law Enforcement Representative
Mike Celestino, SAS Chair	

Staff

Robert Beal	Jeff Kipp
Toni Kerns	Laura Leach
Max Appelman	Savannah Lewis
Kristen Anstead	Sarah Murray
Pat Campfield	Caitlin Starks
Maya Drzewicki	Deke Tompkins
Chris Jacobs	Geoff White

Guests

Rob Allen	Liam Brouillette
Bill Anderson, MD (AA)	Simon Brown, MD DNR
Gerald Audet	Jeff Brust, NJ DEP
Pat Augustine, Coram, NY	Erik Christiansen
Richard Balouskus, RI DEM	Matt Cieri, ME DMR
Peter Benoit, Ofc. Sen King, ME	Allison Colden, CBF
Jessica Best, NYS DEC	Heather Corbett, NJ DEP
Alan Bianchi, NC DNR	Jessica Daher, NJ DEP
Ellen Bolen, VMRC	Monty Deihl, Ocean Fleet Svcs.
Jason Boucher, DE DFW	Greg DiDomenico, Garden State Seafood
Dick Brame, CCA	Russell Dunn, NOAA

These minutes are draft and subject to approval by the Atlantic Striped Bass Management Board.
The Board will review the minutes during its next meeting.

Guests (Continued)

Eric Durell, MD DNR
Wes Eakin, NYS DEC
Mark Eustis, Grey Owl Analytics
Peter Fallon, Maine Strippers
Lynn Fegley, MD DNR
Cynthia Ferrio, NOAA
Tony Friedrich, SGA
Thomas Fuda
Jim Gilmore, NY (AA)
Lewis Gillingham, VMRC
Angela Giuliano, MD DNR
Willy Goldsmith, SGA
Bob Groskin, Teaneck, NJ
Carol Hoffman, NYS DEC
Pete Himchak
Jeffrey Horne, MD DNR
Harry Hornick, MD DNR
Kyle Horrocks
Stephen Jackson, USFWS
James Jewkes
Pat Keliher, ME (AA)
Dale Kirkendall
Adrienne Kotula, CBF
Nicole Lengyel Costa, RI DEM
Chip Lynch, NOAA
Pam Lyons Gromen, Wild Oceans
Conor MacWilliams
Shanna Madsen, VMRC
John Maniscalco, NYS DEC
Genine McClair, MD DNR
Dan McKiernan, MA (AA)
Conor McManus, RI DEM
Sean Mendyk
Stephanie Merhoff, DE DFW
Nichola Meserve, MA DMF
Steve Minkinen, US FWS
Chris Moore, CBF
Pat Moran, MA DMF
Jerry Morgan, Madison, CT
Brandon Muffley, MAFMC
Allison Murphy, NOAA
Brian Neilan, NJ DEP
Ken Neill, Yorktown, VA
Robert Newberry
Josh Newhard, FL FWS
Patrick Paquette, MA SBA
Rep. Sarah Peake, MA (LA)
Rich Pendleton, NYS,DEC
Wesley Phillips
Chris Piatek
Paul Piavis, MD DNR
Nicholas Pieper, NOAA
Michael Pierdinock
Daniel Pillitteri
Nicholas Popoff, US FWS
Courtney Roberts, Lake Regions Schools
Tim Sartwell, NOAA
McLean Seward, NC DENR
David Sikorski, CCA
Somers Smott, VMRC
Ross Squire
Helen Takade-Heumacher, FL FWS
Taylor Vavra, Strippers Forever
Beth Versak, MD DNR
Mike Waine, ASA
Timothy Wheeler, *Bay Journal*
Kate Wilke, TNC
Angel Willey, MD DNR
John Page Williams
Charles Witek, W. Babylon, NY
Spud Woodward, GA (GA)
Christopher Wright, NOAA
Erik Zlokovitz, MD DNR
Rene Zobel, NH F&G

The Atlantic Striped Bass Management Board of the Atlantic States Marine Fisheries Commission convened via webinar; Wednesday, October 21, 2020, and was called to order at 1:30 p.m. by Chair David V. Borden.

CALL TO ORDER

CHAIR DAVID V. BORDEN: Good afternoon, all! My name is David Borden, I am the Governor's Appointee from Rhode Island, and I'm also the Board Chair for this meeting. We've distributed an agenda that includes three major items for discussion, and potentially action. We also have an AP nomination that we need to deal with.

APPROVAL OF AGENDA

CHAIR DAVID V. BORDEN: In regards to the agenda, are there any additions, deletions or modifications to the agenda? I see no hands up. Toni, do we have any hands up?

MS. TONI KERNS: I do not, David.

CHAIR BORDEN: Okay, so the agenda stands approved as distributed.

APPROVAL OF PROCEEDINGS

CHAIR DAVID V. BORDEN: We'll move on to the proceedings from the August meeting. In a similar vein, are there any additions, deletions or corrections to the proceedings? Please raise your hand if you want to comment. I see no hands up, so the proceedings stand approved by unanimous consent.

PUBLIC COMMENT

CHAIR DAVID V. BORDEN: Public comment, we always allow the public to comment on proposals that are not part of the agenda.

We normally limit the opportunities to a minute or so. Are there any members of the public that would like to comment on the subject of striped bass? I see no hands up. I would just ask, Toni, if I somehow miss a hand, please correct me and note it. There are no public comments.

CONSIDER APPROVAL OF STATE IMPLEMENTATION PLANS FOR ADDENDUM VI MANDATORY CIRCLE HOOK REQUIREMENTS

CHAIR DAVID V. BORDEN: so we'll take the first item on the agenda, which deals with circle hooks. This is Addendum VI. It is scheduled for final action today, if possible, so I'll turn it over to Max.

MR. MAX APPELMAN: Good afternoon everyone. Give us a second to switch over controls and get our presentation up on the screen. Okay, so the Plan Review Team met in early September to review state implementation plans for Addendum VI, the circle hook requirements, and to develop some comments and recommendations for the Board to consider today, a report from that PRT meeting was included in your meeting materials. But really quick, just a little bit of background before we get into it.

Addendum VI was approved back in October, 2019. That Addendum changed commercial and recreational measures across the coast, and also required the mandatory use of circle hooks, when fishing with bait to reduce the release mortality rate in recreational striped bass fisheries. In addition to that, although not a requirement, the Addendum strongly encourages states to develop public education and outreach materials to garner support and compliance with this requirement, and just promote the general benefits of circle hooks. States are required to implement these requirements by January 1st. Back in December of 2019, when implementation plans were due for all the provisions in Addendum VI, the TC reviewed those state plans, and noted that a number of states were unable to provide sufficient information regarding the circle hook requirements at that time.

A lot of states were still going through scoping to craft regulatory language, and were unable to provide those types of details back in December. The TC recommended that states resubmit implementation plans later in the year, go out in time for scoping to play out, and some of these regulatory processes to play out a bit.

With that the Board reestablished August 15 as the new deadline for circle hook implementation plans. That's how we came to today. As far as requirements in the Addendum, there is a definition for circle hook, a non-offset hook, where the point is pointed perpendicularly back towards the shank, and the term non-offset is defined as when the point and barb are in the same plane as the shank.

Meaning that when the hook is laying on a flat surface, the entire hook and barb also lay flat. Aside from those two definitions, the states have flexibility to specify other details of the regulation to address any specific needs of the state fishery. For implementation plans states were asked to include a copy of final or proposed regulatory language.

In that language there should be a definition of circle hook that is comparable to that cited in Addendum VI, as well as an implementation date, no later than January 1. If any exemptions were proposed, the state was asked to include justification, quantitative data if possible, to justify that exemption, and also to include a description of any outreach materials that are being developed or have been developed to promote the use of circle hooks.

Again, the PRT met in September to review those circle hook plans, and as far as regulatory language, the PRT determined that all state proposals do require anglers to use circle hooks when fishing with bait to target striped bass. As far as circle hook definitions, all those regulations did include a definition of circle hook that is comparable to that cited in Addendum VI.

That said, the PRT noted a lot of variation among states, and that regulatory language as you can see in Table 1, which was provided in the report. You can see from that table that almost every state wrote something different for those requirements, although they all

essentially say the same thing. Some states apply the restrictions to all directed fisheries, recreational fisheries, regardless of target species, and not just when targeting striped bass a little bit beyond the requirements of the Addendum.

Also notice that these states are requiring the use of corrodible hooks, and a few PRT members noted that that particular requirement may be inadvertently limiting the size of hooks that can be used in the fishery. The note there is that some of these PRT members found that their own scoping processes that not all companies, tackle companies, make corrodible hooks for all hook types and sizes, so there may be some inadvertent limitations in those types of requirements. With all that variation, the comment from the PRT is largely reiterating comments that we've heard from the Law Enforcement Committee on the importance of jurisdictions agreeing on standardized regulatory language, how that could help with enforceability and compliance, especially where states share common borders and fishing areas. Just reiterating some of those concerns that have been raised by the LEC in the past regarding the variation in language between states.

As far as exemptions, there were three exemptions included in Implementation Plan at the time that the Review Team met to review them. First is with Maine. Maine has had circle hook requirements on the book since 2013 when targeting striped bass. There is an exemption there for anglers using rubber or latex tube rigs.

There was not much data in the Implementation Plan to support that, but these regulations have been on the books since 2013. For Massachusetts, those regulations were put in place earlier this year. It is my understanding a couple exemptions here. The first is for anglers aboard for-hire vessels, and to justify that exemption there is data from MRIP data to support that exemption, essentially that the less than 2 percent of the releases in that state are coming from the for-hire vessels, using data from 2016 and 2017.

Then the second exemption is for anglers using artificial lures designed to be trolled, cast and retrieved, or vertically jigged with natural bait. The third exemption is from the Potomac River Fisheries Commission. In here the circle hooks were not required prior to May 1. During the catch and release season of note, barbless hooks are required during that time of year. That has been a requirement since the late 1990s.

But since the implementation plans were submitted, PRFC has proposed to extend mandatory circle hook requirements to the catch and release season, so extending it year-round. Implementation there is expected before January 1, so this is no longer considered an exemption from PRFC.

I will note that the PRFC had a difficult time discussing these exemptions, and whether they meet the intent of the provision. As I mentioned earlier, Addendum VI does provide states flexibility to specify exemptions. However, there is no guidance to determine which exemptions are acceptable and which aren't.

There is no definition of flexibility from the Addendum or from the Board. Unfortunately, the Review Team could not make a definitive recommendation to the Board regarding these proposed exemptions. That aside, the PRT again discussed some of the general challenges with enforcing these circle hook regulations, which the Board has been aware of for some time, and the added challenges of inconsistent regulations between states has been raised again by the Law Enforcement Committee, again here by the PRT.

Particularly within these shared water bodies and between fishing modes within a state, so reiterating those concerns again. The PRT also discussed that while the proportion of effort or releases coming from a sector within a state may be small, that doesn't necessarily make it a

small number, in terms of numbers of fish. In the report is an example comparing the for-hire sector releases in Massachusetts to the entire state of Delaware, just for comparison. That is about the same amount of fish. Looking at it from that perspective that raised some other questions among the PRT about intent, and how you define flexibility here. The last note is that the PRT saw that not all of these regulations have gone through the formal regulatory process. There is potential for changes to happen before their implementation deadline.

The recommendation here is that if any of these proposed measures do change, that they be resubmitted to the Plan Review Team for review, and that the Board had a chance to review those proposals as well. Regarding public education and outreach. Again, this is not a direct requirement of Addendum VI.

It is a strong recommendation, but the Review Team was very happy to see that all states have or are developing public education outreach campaigns to garner support and compliance with circle hook measures. Some states are doing more than others, but it was clear that all states had invested time and resources to spread the word about this new requirement, to raise awareness to shed some light on the benefits of circle hooks, and promote best practices in the fishery.

Some examples there are developing web content specific to circle hooks or safe fish handling techniques was a common theme. Distributing materials at different trade-show events, backside at bait and tackle shops and so on. A lot of e-mail blasting to constituents, providing education materials to law enforcement officers to hand out as pamphlets.

We saw partnering with nonprofits. It appears that the American Sportfishing Association has partnered with a number of states already to help develop state-specific web content and other outreach materials. Also seeing states taking out ads in local newspapers, magazines, and so on. You

can see that there has been a lot of work here to spread the word about these new requirements, and some of the benefits of circle hooks.

We did see that some of these efforts were held back or delayed in 2020, due to COVID, but there has been a general intent to ramp up efforts in 2021, particularly upon the adoption of final regulation. That concludes this report, Mr. Chair, I'm happy to take any questions or turn the discussion back over to the Board.

CHAIR BORDEN: Thank you very much, Max. I've got questions. I've got Ritchie White, and then John McMurray.

MR. G. RITCHIE WHITE: Two issues I would like to discuss, first being the corrodible hook availability. Everything I see in the tackle shops, New Hampshire, southern Maine, and northern Mass, it's just the opposite, that the stainless-steel hooks are the ones that are limited in sizes and quantity, and the overwhelming amount of hooks available are corrodible. I don't see that, in this part of New England, I don't see that as an issue at all.

Second issue is Massachusetts exemption for charter boats. I think this sends the wrong message to the recreational sector. I think it sends the wrong message to the charterboat sector, and it clearly goes against this issue that we're trying to tackle to limit recreational discards. I think that it sets a precedent for other states to follow, and I don't think it's an acceptable exemption. I don't know if that would require a motion to not accept that. I will leave that to you, Mr. Chair, but I would certainly make that motion if that is applicable.

CHAIR BORDEN: Ritchie, I apologize to you. I should have said at the beginning that I would like to take questions first, and then we'll get into actually statements on the policy and suggestions on how to remedy that. I apologize

for that. I've got John McMurray and then John Clark.

MR. JOHN G. McMURRAY: I have a question about the Mass exemption also. I guess I would like to hear more about the rationale, because I don't really understand why that state wants, or why they should get an exemption. I understand that they account for a small amount of discards. But I guess I'm more curious as to why the charter industry doesn't want to use them. I mean they are easy to use, they work, and they reduce discard mortality. I guess I'm also curious as why is this specific to Mass? Why didn't we see anything similar from other states?

CHAIR BORDEN: Max, have you got a response?

MR. APPELMAN: Yes, I mean I can try to dig out some information from Massachusetts implementation plan, but not to put Massachusetts on the spot, I think that question is best responded to by the state.

CHAIR BORDEN: Does somebody in Massachusetts want to answer or respond to that question?

DR. MIKE ARMSTRONG: Yes, Mr. Chairman, happy to do it. As you know, we went to public hearing a year ago with this, and we got some pushback from the for-hire fleet. They simply asked for more flexibility in what they used for terminal tackle. We looked at the percentage that they were of the fishery, and you know we just decided to give them that flexibility. We'll leave it up to the judgment of this Board. We do notice that no other state asked for it. But we were simply providing flexibility for our fleet.

CHAIR BORDEN: Thank you, Mike. Next on the list I've got William Hyatt, and then Martin Gary.

MR. WILLIAM HYATT: I would just like to go back to a discussion that was held at this meeting. I think it was a full year ago. It had to do with discussions of the report from the Law Enforcement Committee on how difficult it was to use intent in these types

of regulations, as reflected by the fishing for a cause that is in so many of these.

I think I would like, if possible to just hear from Law Enforcement whether or not they are comfortable with the variety of regulations that have been put forth here, and if they still feel that those regulations that are reflected that don't require interpretation of intent in the field, are better designed and more accurately reflect the requirements and the intents than those that have language that do require an interpretation of intent.

MS. KERNS: Mr. Chairman, Kurt is on the phone, just as an FYI.

CHAIR BORDEN: Martin.

MR. MARTIN GARY: Max, could you go back to the exemption slide, I just had a question about Massachusetts. Okay, so two questions if we could, if it isn't too much. It really isn't a critique, so much as helping me get educated. Mike, maybe you could answer it if you're comfortable. I was just curious, as a follow to the previous inquiry about the exemption for the for-hire sector. If they are not using circle hooks, do you know whether they are using Jays, or are they using trebles, or is it a combination of the two?

That's one. Then the second one is really just educate me on why the artificial lures troll cast or you can vertically jig with vertical bait. I'm fairly familiar with the folks in the Chesapeake that utilize this strategy, and they generally don't, as far as I know, use natural bait, but maybe that is something specific to fishing up there. I'm just curious about that as well, if you can.

CHAIR BORDEN: Mike, do want to respond you can have somebody else on your delegation respond?

DR. ARMSTRONG: No, I'll go ahead and respond. I believe they are mostly using J-hooks. They are concerned about losing fish, which it does happen when you have circle hooks. Most of them said, as soon as we catch a fish, we'll switch over to circle hooks. I don't know, their argument wasn't that complicated for us. For the artificial lures, so this is mainly the tube and worm, so Maine has the same thing.

I assume other states. I don't know that that is unique to Massachusetts. The tube and worm, it doesn't work without putting a worm on it, so it needs to be circled by this. But because it's trolled, you just never, ever deep hook with it, same as fishing with an artificial. We thought that should be examined.

We do have, you know there is some wire lining that goes on, and they will put a piece of pork rind on it, so technically that is a natural bait. We just wanted to cover it. I suspect other states have niche little fisheries, where people throw pieces of natural bait on to do certain things. We were just looking to cover the bases on that one. It's really the tube and bore, the tube in one that they're interested in.

MR. GARY: Thank you, Mike, and thank you, Mr. Chairman, it was really just a curiosity on my behalf, thank you.

MS. KERNS: David, I just wanted to let you know that Kurt Blanchard is on the phone, and he is the LEC representative for striped bass. I think he would be able to answer Bill Hyatt's questions, if you wanted to give Kurt the floor.

CHAIR BORDEN: Kurt.

MR. KURT D. BLANCHARD: Hey David. I think that was Bill talking about the intent, the intent of prospective fishing. We've spoken on that in the past, and made it quite clear that we do not favor circle hooks to this level. We fully support it in the educational component, to make it mandatory we're kind of spooked. We're on the opposite side

of the final decision, and we are in support of it, because we support the program. Whenever you create these situations where you start to create these small exemptions for niche fisheries or whatever, it just completely diminishes the intent of what this plan is all about, and the difficulty in enforcing it. If Massachusetts, for example, starts to have these handful of exemptions, I'm sure the folks in Rhode Island and adjoining states are going to want the same exemptions.

It just waters down the whole intent of what I felt, or believe the Board was trying to get to with their aggressiveness toward making circle hooks mandatory. I think it was pretty clear how they wanted this implemented, you folks wanted this implemented, as far as the design, the use, things like that that were identified and supported. I am concerned at some of these proposals, and how they may be implemented to the respective states, and then what that does to the officers out in the field trying to enforce them.

CHAIR BORDEN: Thank you, Kurt, I've got Bill Gorham please, and then William Hyatt.

MR. BILL GORHAM: Has anybody worked with the manufacturers and regional distributors, to ensure that these specific hoops are going to be able to be supplied to tackle shops at a time that this is to be implemented? I only bring that up, because I know there is regional, and if I'm not mistaken national shortages of all fishing supplies.

I'm a manufacturer myself, and it's really a struggle for us to get hooks, and then tackle shops they are really having a hard time getting any type of hook, rod, reels. I'm just wondering if anybody has reached out to see if this is going to be possible this year.

CHAIR BORDEN: Does anyone on staff want to respond to that?

MR. APPELMAN: I can give it a shot, Dave. I mean certainly no Commission staff have reached out to tackle shops or those that produce these types of hooks across the coast. I think the expectation is that through the individual state scoping processes, or our regulatory processes, they would ask these questions. Unless there are any Board members that want to weigh in here, I don't have much to offer from a Commission staff perspective.

CHAIR BORDEN: Do folks want to respond to that? If you would raise your hand. I don't see any hands up.

MS. KERNS: David, you have a bunch of hands.

CHAIR BORDEN: Tom Fote, you're up first, Tom, but I'll recognize you now.

MR. THOMAS P. FOTE: Yes, I mean any tackle store you go in that is a worthwhile tackle store is carrying circle hooks. Circle hooks have been used on striped bass for the last 25 years, from everybody that is concerned about striped bass. There is no shortage of circle hooks around, and unlike regular J-hooks, circle hooks. I don't even remember seeing any stainless-steel, because the circle hooks are sharper, and the way the bend is, they basically use it like that. I'll wait until a motion or something, when this comes up to a vote, but there is no shortage of circle hooks. The manufacturer will get all the circle hooks you want. If you go to any show that's all you see. And when you look at whether it's any of the good hook manufacturers, from Mustad to, I can't think of them right now, because I'm getting old. But yes, I mean I have a full bunch of circle hooks downstairs, even including 10 circle hooks.

CHAIR BORDEN: Thanks, Tom. I've also seen on a list; the new hand is Mike Wayne. Mike, do you want to respond to that question? If you want to speak, I'll recognize you later on, but if you want to answer that question for the Board, I think that would be helpful.

MR. MIKE WAYNE: Thank you, Mike Wayne from the American Sportfishing Association. The tackle manufacturers are part of our membership of our association, so in advance of this requirement we made sure that our membership was aware that this circle hook was going to be a requirement in the striped bass fishery.

We did try to give them a heads up. The hook manufacturers specifically, that this fishery was headed towards requiring the use of circle hooks when fishing with bait. We did extend that to our membership, just to allow them the opportunity to prepare for a higher demand as a result of this regulation. Thanks, Mr. Chairman, for giving me the opportunity to clarify that.

CHAIR BORDEN: I'm going to go back through the list. I've got Mike Luisi, Justin Davis, and then Chris Batsavage.

MR. MICHAEL LUISI: I just have another question for Massachusetts and the exemption, and I just want to make sure that I'm clear. I understand the part of the exemption that refers to anglers using an artificial lure tipped with some form of bait, or some form of natural bait attached.

What I'm not clear about is, if a charterboat is fishing solely with bait, if they're live lining or chumming, or chunking in some way, just straight bait with no artificial lure attached. Are they included in that exemption? Are the anglers aboard their vessel who are fishing solely with bait with no artificial lure attached, are they included in this exemption? I just want to make sure I'm crystal clear as to what this exemption applies to.

CHAIR BORDEN: Thanks Mike. Mike.

DR. ARMSTRONG: Yes, the exemption applies to any manner of fishing onboard a for-hire vessel.

MR. LUISI: Okay, thank you, Mike.

CHAIR BORDEN: Okay, I've got Justin Davis, and then Chris Batsavage.

DR. JUSTIN DAVIS: I have another question for Massachusetts, although before I ask my question, I do just want to point out. If memory serves, I think Massachusetts implemented their circle hook regulation well prior to the mandate that came from Addendum VI, as we started working on the Addendum VI process and it became apparent what a challenge discard mortality was for this fishery. Massachusetts was proactive, and enacted that circle hook regulation very early on. I would just like to applaud them for that and for their proactive approach to this. My question has to do with the process by which Massachusetts implements regulations. You know the process that all of us use in our various states to get regulations on the books can vary quite a bit.

In Connecticut I'm sometimes very envious of other states who are really nimble and flexible in this regard. In Connecticut I always tell people, it takes somewhere between 6 months and 15 years to get a regulation on the books. My question for Massachusetts is, if they were to decide to change their existing circle hook regulation, what would be the timeline on that? Is that something that they could accomplish relatively quickly, in a matter of weeks or months, or is that something that would take much longer?

CHAIR BORDEN: Mike Armstrong.

DR. ARMSTRONG: Yes, that would be just a regulation change for us, so we would bring it to public hearing within a couple of months, and then bring it to our Board. We can probably get it done in three or four months.

CHAIR BORDEN: Justin, do you need to finish, or do you have something else?

DR. DAVIS: No, that was great, thank you.

CHAIR BORDEN: I'm going to move on, I've got Chris Batsavage, and then Dennis Abbott.

MR. CHRIS BATSAVAGE: This question might be more for our Law Enforcement representative. Based on the law enforcement concerns over targeting and intent, which I know isn't easy to enforce. What we did in North Carolina was we also required the fishermen who keep striped bass using natural bait, to be using a circle hook at the time to try to combine, maybe to incentivize the use of circle hooks.

They think they have a chance of catching striped bass while out fishing, and because it's very likely that anglers in our state can claim, probably rightfully so, that they were targeting some other species, where circle hooks aren't needed while catching striped bass. I didn't know if any of the states had those kinds of discussions. Also, would a provision like that from a law enforcement perspective make this easier to enforce?

CHAIR BORDEN: Comments on that? Someone on staff or enforcement?

MR. BLANCHARD: David, Kurt Blanchard, I can respond to that if you would like.

CHAIR BORDEN: Please.

MR. BLANCHARD: The consensus of the Law Enforcement Committee was one of the discussion points that we had in these earlier discussions on circle hooks. Across the board we had difficulty identifying intent on the use of the hooks. If we get in the situations, and I'll just again use Rhode Island for an example. If I've got folks out blue fishing, and they are using J-hooks and catching striped bass. Without a long-term surveillance on that vessel, and wait for it to leave the area and then intercept. It just takes a lot of time to enforce and to make those types of cases; very, very difficult for us.

I'm hoping that responds to Chris's point. I guess if you would have tried to implement a regulation to prohibit J-hooks period, I'm not sure how that would play out for other species in other fisheries, just not to have them onboard, or not to have them accessible. It gets very complicated. Thank you.

CHAIR BORDEN: Thanks, Kurt. On the list I've got Dennis Abbott next, and then Mike Armstrong. You know what I think we would do is move on to how we handle this issue, whether or not we approve it, set a deadline for implementation, whatever the options are. Dennis Abbott.

MR. DENNIS ABBOTT: Keeping Massachusetts right in the barrel right now. The use of artificial lures designed to be trolled cast and retrieved. We've gone to great extent to describe what a circle hook is. For law enforcement, probably to Kurt would be how would you identify an artificial lure designed to be trolled, cast, or retrieved? To me that could be anything from a little spinner to whatever, so from a law enforcement point of view, wouldn't you think this would be a difficult thing to enforce?

CHAIR BORDEN: Kurt, I think that is a question for you.

MR. BLANCHARD: Yes, Mr. Chair. Yes, it would be very difficult. What ends up happening on a law enforcement case, and trying to make a case like this. We would have to get into a situation of defining, and maybe looking back at manufacturers definitions, and things like that to see how each and every one of these types of devices are defined.

The regulation was very, very clear, artificial bait, natural bait, artificial bait, and how it was described in the plan. That was enforceable. It was difficult, but it was enforceable. Again, each time we enter into these intricate type definitions or pieces of equipment, and things like that. It gets very, very complicated, and it waters down and diminishes the plan.

CHAIR BORDEN: Next on the list, I've got Mike Armstrong, and then I'm going to move to how we handle that and ask for comments. Mike.

DR. ARMSTRONG: Mr. Chairman, I'm going to defer for a minute or two. Thank you.

CHAIR BORDEN: Early on, Ritchie White got into the issue of opinions. Does anyone else have suggestions on how we handle this? It is scheduled for action, but obviously there is a range of alternatives that we can use. Comments on how we handle this. I've got Roy Miller and Tom Fote.

MR. ROY W. MILLER: I'm wondering if we could compromise a bit here, with regard to Massachusetts. In other words, could we approve the circle hook document, the Addendum VI, with the caveat that Massachusetts, and give Massachusetts an opportunity to change their circle hook requirements. I gather that the two exemptions they proposed are not already on the books, so maybe they are maybe they aren't. But it would be cleaner if they were on the books, to have them rescinded and new circle hook regulations put in place. Could we approve the document with the caveat that Massachusetts would have a set amount of time to come into compliance with the circle hook requirements, in the absence of their two proposed exemptions?

CHAIR BORDEN: Does staff want to comment on that, either Max or Toni?

MR. APPELMAN: Sure. Well, it is really the purview of the Board as to how they want to handle these implementation plans. If there are parts of Massachusetts regulations that the Board is not comfortable with, I think explicit guidance to Massachusetts as to what you expect will be needed for sure. But how the Board wants to direct Massachusetts is up to you guys.

CHAIR BORDEN: All right thanks, Max. I've got Tom Fote, and then I would like to go back to Roy's suggestion.

MR. FOTE: I'm ready to make a motion that we don't accept exemptions from recreational fishing using bait, unless you use circle hooks. If I get a second to the motion I'll basically explain why.

CHAIR BORDEN: Tom, have you got this written out, so you could make it so it's clear to everybody what's your proposal?

MR. APPELMAN: Dave, just give us one second. Maya will take back control of the PowerPoint, and we'll get blank slate up on the screen, and Tom, go ahead and make your motion.

MR. FOTE: Motion to not exempt any state from putting in place the circle hook rules for bait fishing. If I get a second to that I'll clarify.

MR. ABBOTT: I'll second that.

CHAIR BORDEN: We have a motion by Tom Fote, seconded by Mr. Abbott, discussion on the motion.

MR. FOTE: Yes, I'll go back and explain. When we talk about, I mean I've been fishing stripers for 50 or 60 years now, and we know that this is between bait and non-bait. Bucktails, when you tip them with pork rind, pork rind is a process that is actually an artificial lure. The same thing when you use tubes.

Yes, in a worm fishery, basically they like to put worms on hooks, but that is also a bigger opportunity to basically gut hook a fish. We are in this process to basically reduce the 52 percent of the recreational mortality or the 48 percent of the overall mortality that is caused by hook and release. We would be negligent if we did not enforce a rule like this. I mean this is a long time coming. I don't understand it, because most of the party boats and charter boats that I know of basically adopted this 10 or 15 years ago, when we first started promoting it, and that actually anybody that fishes circle hooks

were using bait in striped bass realized that as a better opportunity of basically catching striped bass and holding onto them, because it basically hooks them in the right place, not in the gut or not in the mouth, but right in the corner of the mouth where it's supposed to be.

As a matter of fact, if I was really going to do this, and to make it easy for law enforcement, we ought to include bluefish. Again, we don't want fish swallowing hooks so we gut hook them, because when we hook them in the mouth and we release them, we have a better event, and that's my comment on this.

CHAIR BORDEN: Mr. Abbott, do you want to comment as the seconder?

MR. ABBOTT: Only to say that keep it simple. When you get into exemptions you are just looking for trouble, and it's not good for the fishery to allow exemptions, in the long run.

CHAIR BORDEN: All right, thank you, Dennis. Next on the list I have Mike Armstrong and then John McMurray.

DR. ARMSTRONG: I certainly agree with the sentiment, which is why we put in circle hook mandatory gear ahead of everyone else. But I disagree that an artificial lure, fish like an artificial lure, which has a mouth tag. Putting some bait on it to make it more attractive, for whatever reason, I don't think. I think those in Maine for tubes and worms is reasonable.

I appreciate the pushback against the charter, and I appreciate the wisdom of the Board. I do think there are certain exemptions, as spelled out in the Addendum we passed, for small little niche things like that. I wouldn't be proposing if I didn't feel that these artificial lures are going to hook up in the mouth, whether they have bait on it or not. That's all.

CHAIR BORDEN: I've got John McMurray, and then Megan Ware.

MR. McMURRAY: I was going to say something very similar to what Mike said. I support the motion, and I don't think charter boats should have an exemption, but the tube and worm thing is justified. It is basically a very long hook with a tube over it, and it gets trawled. It's very unusual to gut hook a fish on that rig, and I understand why people want to use worms on the end of it, and not have to use circle hooks. That part of it makes sense to me. But I do support not giving the charter boats an exemption.

CHAIR BORDEN: Megan, and then Justin Davis.

MS. MEGAN WARE: Yes, I guess the conversation has been interesting. I agree I'm not comfortable with the Massachusetts charter exemption, but I do believe that the tube rig exemption in Maine, and it sounds like that is what Massachusetts is also trying to get at with their lure exemption. I do think that warrants the exemption, so I'm going to make a motion to substitute. I'm sorry to do this on the fly, Maya. **I'm going to substitute to approve the states implementation plan for circle hooks with the exception of the Massachusetts for-hire exemption.** If I get a second, I think it might be helpful maybe to just talk a little bit about Maine's history with the circle hook requirement.

CHAIR BORDEN: A new motion by Megan Ware. Is there a second?

MS. KERNS: Justin Davis, are you seconding that?

DR. DAVIS: Yes, I am.

CHAIR BORDEN: Megan, you said you wanted to comment further.

MS. WARE: Yes, that's thoughtful, thank you, Justin. Just a little bit of history, at least I can speak to the treble hook exemption in Maine. We've had a circle hook requirement since 2013, and the exemption went into place at the same time. A lot of people have talked about the tube rig, and how this type of gear tends to be more actively fished, and I think there are certainly observations out

there that this has a very low incident of gut hooking.

Unfortunately, we didn't have data on the number of anglers that use this type of terminal gear, but just anecdotally in the fishery here in Maine, we think it's a very small population. Given that, and the fact that it has a low incidence of gut hooking, when the circle hook requirement went into place in Maine, we didn't feel like this exemption was undermining the conservation goals that we were trying to achieve.

You know as I mentioned, this is I think our eighth year now under the circle hook requirements, and with this exemption. I think certainly anglers in Maine and Marine Patrol are used to this exemption at this point. You know I think we've tried to overcome some of the enforcement challenges that have been brought up. I'll also note that we do require circle hooks for bluefish, so I think that that will also be important to our success here in Maine.

CHAIR BORDEN: Thanks, Megan. Dr. Davis, do you want to talk as seconder?

DR. DAVIS: I prefer the substitute motion to the original motion. I certainly appreciate the intent of the original motion of trying to strive for uniformity across states, and the regulations that we're exempting, and to try to stick to the intent of this mandate of providing as much reduction in discard mortality as possible.

I was also not comfortable with the for-hire exemption in Massachusetts, and I think we've had a pretty robust discussion about that, and I won't rehash the reasons why I didn't necessarily feel good about that exemption. However, I personally don't have as much of a problem with the exemptions around use of artificial lures that have sort of bait on the hook, or involved in the lure.

I've heard from constituents in our state who frequently fish a tube and worm rig, so that is the exemption that is built into Maine's plan. Also, people who fish rigged eels. The way those artificial lures are fished, they don't tend to result in gut hooking the same way a bait fished on the bottom stationary would with a J-hook. I'm pretty confident that by allowing an exemption for those types of artificial lures that we're not significantly undermining the conservation benefit of the circle-hook mandate. I also prefer the substitute motion, because to me this leaves us in a much clearer place, if we approve this as to what's actually happening here. We are approving all the state implementation plans, with the exception of Massachusetts. Those states can either implement those regulations or leave them on the books as is, if they are already on the books.

As I interpret this, we're essentially saying to Massachusetts, you will need to change your existing circle-hook regulation to remove the for-hire exemption. I do think we should possibly discuss whether we need to provide some more language in here that might sort of require Massachusetts to submit a new implementation plan by some date certain. But overall, much more comfortable with this substitute motion, and that's why I support it.

CHAIR BORDEN: Megan, is it your intent, I just want to be clear on the record. If this motion were to pass, is it your intent that Massachusetts would be responsible for coming back to the Board and reporting at the next meeting how they intend to handle it, or have you got another course of action with your position?

MS. WARE: Hi Mr. Chairman, yes. I think that sounds like a good plan to me. I don't know if Max wants to weigh in, if that is necessary or not. But I certainly think that might provide a level of comfort to this Board, just knowing how much this progresses based on this motion. I would support having them come back with just a brief update at our next meeting to fill us in.

Draft Proceedings of the Atlantic Striped Bass Management Board Meeting Webinar
October 2020

CHAIR BORDEN: Mike, do you want to comment from the process perspective?

DR. ARMSTRONG: Sure. Yes, I mean we can give you a good faith declaration that we will move on, and immediately. I honestly don't think you need to put it in writing. We have an omnibus public hearing coming up in a month or so. We'll put it on that. You know our fishing season doesn't start until May, so we'll have it changed by May, no question about it.

CHAIR BORDEN: Other questions, I've got Martin Gary, Tom Fote your hand is up also. Martin.

MR. GARY: Thanks Mr. Chairman, and thanks everyone for the education on the tube and worm gear update. Thanks, John for your comments. I really appreciate that. I know you're out there a lot and understand what's happening. I guess the question is for the maker of the motion, for Megan.

I'm just wondering, so it sounds like that is a rig that it's already preprocessed with a J-hook attached to it, and it would have to be retrofitted, which might be unreasonable. Is that kind of part of the logic in promoting this exemption? Is that correct, or if anybody else has some perspective on that. But I'll put it to Megan first.

CHAIR BORDEN: Megan.

MS. WARE: I actually might have to pass that question on to someone else who would know if it comes pre manufactured like that. But I can say that we don't allow treble hooks on the tube rig, if that's kind of what you're getting at, Marty.

MR. GARY: No, I was really thinking, you know is this something the people buy that is premanufactured, and it's just unreasonable to retrofit it with a circle hook. I guess that's where I was going with it.

CHAIR BORDEN: On the list I've got Tom Fote, your hand is up.

MR. FOTE: Yes, my hand is up. Can I speak now, Mr. Chairman?

CHAIR BORDEN: Yes, please.

MR. FOTE: I'm sitting here listening to why we need to exempt for tube. You can fish a long tube without a piece of bait. That has been done before. We have now changed a whole section of the community to recreational fish for striped bass, and had no problem doing that. By eliminating the big fish, we basically took away a lot of tournaments that was around for a hundred years.

We basically said that is no problem, you need to find something else to do. Don't have tournaments, don't raise money for your groups like that, or for the charities. We also told people they can't take a fish they've been taking home forever, with the opportunity to basically catch a world record. That's a decision we made, so we imposed that on a lot of recreational fishermen, and gave them no exemptions.

You can fish a long tube without putting bait on the back of it. I mean that is the way you can fish it. That's the way I always fished it. Yes, maybe the bait gives you more confidence that you're hook something, but it doesn't have to be on the back of that rig to basically work. We're here to make decisions on how we rebuild this stock. This is a concern.

The states that are asking for the exemptions are the ones that really were pushing for us to basically cut back on what we're doing. I'm trying to do what they basically asked us to do, is to basically take and get rid of as much of the circle release mortality that makes up a bigger percentage.

Once you do exemptions, I'm telling you I'm going to hear from other people, well I need to put a worm on it, so they're going to be asking for an exemption in New Jersey, in Rhode Island, and all

the way down the coast basically saying, well maybe that worm helps me catch more fish. That is not what we're asking people to do, to catch more fish.

We're asking them to catch fish in a safe manner, what is best for the fish, and using circle hooks when you have bait is the best way of doing that. Yes, I would support doing this for bluefish, if we're so far because we're worried about bluefish actually being overfished. I mean I'll leave it at that. That is my comment.

CHAIR BORDEN: We've had a robust discussion on this. Does anyone care to make a point that has not been made before? I'm going to take one comment from a member of the audience, who has had his hand up on this. I've got Joe Cimino and Bill Gorham.

MR. JOE CIMINO: I appreciate the chance here. You know I'm curious if there is truly large, broad consent by the Board that they feel comfortable with this type of exemption. You know a lot of states were not pursuing this, but I'm wondering. Can we adopt this language to say that any state that wanted to use this type of gear can have the exemptions? Is there a way to do that today?

CHAIR BORDEN: Staff, Max or Toni.

MR. APPELMAN: Yes, I'm thinking through this a little bit. As you specified in this motion, the exemption that you're not allowing for a state. I suspect you could do a similar language in the motion to allow any state to exempt a certain, you know fishing technique. I don't know why you couldn't do that in a motion. You would have to be very specific though, of course, is what it sounds like here. You're holding on a very specific technique, and making sure that is clear in the motion what you are exempting for this provision.

CHAIR BORDEN: Bill Gorham, please.

MR. GORHAM: In regards to the tube, bait or lure manufacturer have made tube rigs in the past, and you can probably put a circle hook in the back. But if there was more than one hook, installing a circle hook in the midsection would be difficult. But you would definitely have to provide notice enough for them to be manufactured with different hooks.

I really appreciate the gentleman from the ASA commenting, and I would ask him to please reach back out to the manufacturers, as I've been talking to tackle shops, even five minutes ago, and they are still having major problems with supplies. Thank you.

CHAIR BORDEN: Thanks, Bill, I've got a couple of hands up. I've got Ritchie White, Mike Luisi, and Roy Miller.

MR. WHITE: Thank you, Mr. Chair. After listening to how this may open up, I was going to support the substitute, but now I am not. I think we're headed down the wrong road on this thing. We've got to rein it in. We have to stick with the original intent, which was to try to lessen release mortality on striped bass. The more exemptions and if all the states adopt these, we're going down the wrong road. As far as enforceability. There has been a number of questions and discussions about that.

I've followed the LEC meetings for 15 years. Kurt, you can correct me if I'm wrong, but over the years I've heard numerous times that regulations that are difficult to enforce, that they feel that compliance by the majority of the public, and they talked in the 90 percent plus do what is right. It's a tiny, small minority that are the lawbreakers. If these are not totally enforceable, we still gain a tremendous amount by the majority of the public adopting and using circle hooks.

CHAIR BORDEN: Mike Luisi, and then Roy Miller.

MR. LUISI: I just have another point of clarification from the maker of the substitute motion, and then I guess depending on the answer, I may have just a quick follow up comment. To Megan, your motion

here, it speaks directly to the Massachusetts for-hire exemption. Focusing on Massachusetts, would it still allow for artificial lures to be used that are tipped with some form of bait? It would still allow for that provision in the Massachusetts proposal?

MS. WARE: Mr. Chair, if I can. Yes, Mike. I think that is correct. My understanding is that the Massachusetts provision is targeted at the tube in one rig. If I'm wrong, Mike Armstrong, please correct me. Mike Luisi, this would just be not approving the for-hire exemption.

MR. LUISI: Okay, and if I may, Mr. Chairman, just a quick comment. Just to that, and I'm going to need a minute at the time when we need to vote here for a quick caucus with my other Commission members. For a state like ours, who has enforced and put forth circle hook requirements for the last few years.

I can understand a desire and a need for some form of evolution to the process. I understand why this tube and worm rig, you know it is something that has been used, and could be considered more of a mobile gear. I think my focus right now would be more on a strictly a bait gear, you know a bait method of fishing, as far as making sure that that is what is being enforced.

But I do understand. I'm not sure yet where Maryland will stand on this substitute, but I just wanted to put it out there for the record that being in the seat that implementing circle hook requirements in Maryland over the last few years has been an evolution in the making. I could see perhaps supporting the substitute, in the hope that over time we can get to a place where all forms of fishing with the intent to fish for striped bass using bait would be prohibited.

CHAIR BORDEN: Roy Miller. We may have temporarily lost him.

MR. MILLER: I temporarily muted myself. Let me start again. Not to belabor this discussion, but I'm thinking about something in regard to the substitute motion, a practice that I've never done, but I understand it is popular in some areas, and that is to take a treble hook and attach it to a 10 squid or a weight, and jig through schools of pogies to snag a menhaden to use as striped bass bait.

There is a possible exemption that could be allowed if the substitute motion were to pass. With that caveat, I find myself going back to the original motion to not exempt by Tom Fote and Dennis Abbott. The only thing I would add to that is make it clear that we'll refine to the circle hook as defined in Addendum VI.

CHAIR BORDEN: There are a number of hands going up at this point. What I would prefer to do at this point is actually call the question on this, and then we will deal with the results, depending upon where it is. I've got a question for Toni Kerns. I think it is Megan's intent to basically approve the Addendum VI, and Megan, you can correct me if I'm misinterpreting you, with the exception of Massachusetts for-hire exemption. Megan, is that what your intent is?

MS. WARE: Yes, I guess the understanding for our action today is that we need to approve the implementation plan, so I'm hoping that the substitute motion tries to do that with the exception of the for-hire exemption. That part of the Massachusetts plan would not be approved by the Board, if the substitute motion passes.

MR. ABBOTT: To interrupt, Mr. Chair. Could we go back and see the exemption list that shows Maine and Massachusetts?

MS. KERNS: While Maya is pulling that up, Mr. Chairman, if Megan is comfortable with it, we could say, move to approve the Addendum VI state implementation plan, if that makes it clearer for everybody of what's going on. We can certainly do that if that is okay with Ms. Ware.

MS. WARE: Yes, that's a fine perfection, thank you, Toni.

CHAIR BORDEN: Okay, can we get that revised perfected motion on the table, please?

MS. KERNS: We will, David, it's just Dennis asked to see this proposed exemption, so we wanted to show that to you all first really quick, if that is all right.

CHAIR BORDEN: Thank you.

MS. KERNS: Dennis, when you're good then we'll go back to the motion.

MR. ABBOTT: Yes, I just wanted to let everyone understand what they're voting for. Maine obviously has an interest in the rubber and tube rigs. Massachusetts has artificial lures designed to be trolled, dah, dah, dah, dah, dah, dah, and there are two big differences there. I just wanted everyone to be aware if they support this motion, what they are going to be supporting.

CHAIR BORDEN: All right, can we go back to the motion, please?

MS. KERNS: Maya, for here if you could just say, move to approve the Addendum VI state implementation plan. Just add Addendum VI after the. Thank you so much, Maya.

CHAIR BORDEN: Okay, as I indicated before, I have one member of the public who has had his hand up consistently, Patrick Paquette. Patrick, if you would like to address the Board, and then I'm going to call the question.

MR. PATRICK PAQUETTE: Thank you, Patrick Paquette, recreational member of the Advisory Panel and Government Affairs Office of the Massachusetts Striped Bass Association. I very much appreciate the discussion that you guys are having regarding these exemptions for our

state. There was a lot of, I wanted to answer a question from an expertise.

I both charter fish in Boston as a Captain for quite a few years, and now live on Cape Cod and haven't operated in a while. But the use I'm aware, and still in the network. The use of treble hooks in a live bait fishery in Massachusetts in the for-hire fleet still happens. The Massachusetts Striped Bass Association was against exempting charter boats from the circle hook regulation, for the simple fact that we want to reduce mortality across the board. Our charter boat fleet is significant here. We're opposed to that part of the exemption. Regarding the second discussion you guys have been having about the gear, and you're at the top of what is a massive number of exemptions et cetera. Somebody just brought up snag and drop. Good luck when you have that discussion as well.

But regarding the tube and worm, the one point that hasn't been brought up is regarding things like tube and worm, et cetera. Circle hooks are not designed to be trolled. This is really supposed to be about discard mortality. If you make things like the jig at the end of a wire line, you cannot tip that with anything. There are plenty of artificial items that are also sold to do that tipping as well, which won't change the actual behavior at all.

All you're going to do is force people to use something per the tackle shop. The Gulf Corporation makes an artificial worm that is scented just like a regular worm, and all that does is make the money go to the Gulf Corporation, as opposed to the worm digger in Maine. But that being said, in either case you are not necessarily going to be gut hooking fish, fishing tube and worm. But if you render some of these different pieces of tackle that are purchased and that there are hundreds of thousands of in each of our states.

You are going to be creating an economic input that is not something that I believe that you guys have intended to. There is an economic impact to the anglers who have tackle boxes in sheds and boats full of some of this gear, that really needs to be

considered. It's not now just changing hooks, and although hooks are expensive, I understand why we're doing it. But there is really no conservation benefit to eliminating the current way that tube and worms are used.

CHAIR BORDEN: Patrick, can you close, please?

MR. PAQUETTE: Yes. I just wanted to make sure that you were thinking about that. We absolutely in Massachusetts, some of the big organizations supported getting rid of this exemption for our for-hire fleet. We want the conservation benefits to work.

CHAIR BORDEN: Thank you, Patrick. We'll take a three-minute pause, and then I'm going to call the question.

MR. ABBOTT: Can we have a roll call vote?

MS. KERNS: Dennis, we can by default, because I save how each state votes, you end up with a roll call.

MR. ABBOTT: Fine.

CHAIR BORDEN: Are you ready for the question? Does anyone object to doing this, all in favor of the motion. Let me read the motion. Motion to substitute to approve the Addendum VI state implementation plan for circle hooks with the exception of the Massachusetts for-hire exemption. Motion by Megan Ware, seconded by Dr. Davis. Everyone in support of that motion, please raise your hand.

MS. KERNS: I have Rhode Island, Maine, Maryland, Delaware, and North Carolina.

CHAIR BORDEN: Okay, so how many is that, Toni?

MR. LUISI: Mr. Chairman, this is Mike Luisi. I heard Maryland. I did not have my hand up in support of the substitute. Toni may have misread that.

MS. KERNS: Okay, just as an FYI, Mike. Your hand is up right now. Now it is down.

MR. LUISI: Yes, I put it up so I could talk, so I could speak up. I'm going to put it down.

MS. KERNS: Okay, sorry about that.

CHAIR BORDEN: Okay, let's go back and do this again so that the record is clear. All of those in favor of the substitute motion please raise your hand.

MS. KERNS: I have Rhode Island, Maine, Massachusetts, and North Carolina, and Mike Luisi, your microphone is open.

CHAIR BORDEN: Take those hands down, please and then opposed, raise your hand.

MS. KERNS: I have District of Columbia, Pennsylvania, New Jersey, Virginia, Massachusetts. Mike, your hand was up before. New Hampshire, New York, Maryland, and PRFC. I'm going to ask the state of Massachusetts to clarify their vote, please.

MR. ARMSTRONG: I'm being ambiguous, how about that? Just kidding. I don't know how my hand got up, no I was a yes.

MS. KERNS: Okay, so Max, please do not include Massachusetts in the no count.

CHAIR BORDEN: The count is?

MR. APPELMAN: Null votes and abstentions, Dave.

MS. KERNS: I'm going to put the hands down now for everyone.

CHAIR BORDEN: All right, so any abstentions?

MS. KERNS: For abstentions I have NOAA Fisheries and U.S. Fish and Wildlife Service.

CHAIR BORDEN: Any null votes, that's two.

MS. KERNS: Mr. Chairman, if you could just let me get the hands down before you ask for the null votes. If you can ask for the null votes now that is helpful. Null votes, please raise your hand. One from Connecticut.

CHAIR BORDEN: The final vote tally was?

MR. APPELMAN: I missed a vote from Delaware. If Delaware could come on the record and tell us how you're voting.

MS. KERNS: Max, I believe Delaware in the comments said they were voting in favor.

MR. JOHN CLARK: That is correct. Yes, I tried to get my hand up to vote in favor. My thing seemed to be freezing up there, so Delaware votes in favor.

CHAIR BORDEN: Can the staff read the record of the actual vote? At my end the names are changing pretty quickly.

MR. APPELMAN: Yes, I have the vote. It's 5 in favor, 8 opposed, 2 abstentions, 1 null vote.

CHAIR BORDEN: The motion fails, so we're back to the main motion. Any further discussion that hasn't taken place here, something new? We have two hands up, Roy Miller and Justin Davis.

MR. MILLER: Mr. Chairman, I would just add to the end of the motion that we're about to vote on, as specified in Addendum VI, so we're clear what we're talking about.

CHAIR BORDEN: Thanks, Roy.

MR. FOTE: I was going to make that request on my motion.

MR. APPELMAN: Maya, at the end of the main motion, could you add as specified in Addendum VI? Thank you.

CHAIR BORDEN: Tom, is that reflective of your thinking?

MR. FOTE: Yes, David.

CHAIR BORDEN: Okay, so the maker of the motion has agreed to that perfection. I've got Justin Davis.

DR. DAVIS: I just want to be clear on what it would mean if the Board passes this motion. As I interpret it, it would mean that all of the implementation plans as presented today would be approved, with the exception of the Massachusetts and the Maine implementation plans. Because we're not approving those implementation plans, and are stating that no state can have any exemptions for a use of circle hooks when bait fishing.

Maine and Massachusetts would be required to either change their existing regulations on the book, or change their plan to implement regulations, such that those exemptions were no longer on the books, and then would be required to report back to the Board at some point in the future, to assure the Board that they have taken those steps. Is that correct? I guess I would actually direct that to the maker of the motion, to see if that is the intent.

CHAIR BORDEN: Tom Fote, is that your intent?

MR. FOTE: Yes, that is my intent.

CHAIR BORDEN: Okay, does the seconder of the motion agree with that intent?

MR. ABBOTT: Yes.

CHAIR BORDEN: Mr. Abbott has said yes. All right, further discussion on the motion, and I intend to call this pretty quickly, because we've got a lot of good input into it. Anyone else? Any other Commissioners want to speak to this? Toni, have you got any hands up?

MS. KERNS: Just have a member of the public that's all.

CHAIR BORDEN: As I did before, I'll take one comment from one member of the public, and then I'm going to go back to Megan Ware, and then I'm going to call the question. We'll provide a two-minute break to caucus. Robert Groskin.

MR. ROBERT GROSKIN: I want to commend the Commission for their action on the circle hook issue. Would it be possible to also include some best practices for handling caught and to be released fish? As a veterinarian who actually treated fish, I can really attest to the trauma and potential increased mortality due to mishandling of these caught fish. If you reduce the mortality with the circle hook initiative, unless you also accompany it with some sort of best practices, you are kind of defeating the purpose.

I was also wondering, if the circle hook manufacturing companies and packaging companies could include some wording that would indicate that these hooks are conservation enhancing hooks. Maybe create some sort of a special logo for these hooks, possibly do the printing in green, to distinguish them from other hooks, and to emphasize the importance of conservation issues in fishing. Thank you.

CHAIR BORDEN: Thank you, Robert. We'll take those recommendations under advisement, maybe talk to some of the people who are actually involved in this call from the industry. Last comment is Megan Ware.

MS. WARE: I just have two questions on kind of implications of this, since it was like Maine may have to change the regulations. My first would be to the maker of the motion. I just want to be clear that the intent here is that any trolled worm can't have bait unless it has a circle hook. Is that I guess kind of the output of this first motion.

Then, I don't know if it's a question for staff, but just around timing of the new implementation plans for Maine and Massachusetts, should this pass. As I mentioned, I think we'll have to go to rulemaking on this. I'm not sure if we would have time to get this done by the start of the season or not, so I'm just trying to understand timing.

CHAIR BORDEN: We're going to take a two-minute break, and then I'm going to come back and if staff wants to address any of the issues if they're called, I'll recognize them. Other than that, I am going to call the question. Two-minute break.

MR. APPELMAN: I'm happy to address the staff part of that question, Megan, when we come back from the break.

MS. WARE: Thank you, Max.

MR. APPELMAN: It's 3:02 right now, we'll come back at 3:04. Mr. Chair, showing 3:04. Megan, just a quick response there. The Addendum does have an implementation deadline for January 1, so if Maine is unlikely to hit that deadline if this motion were to pass, and we would have to go back to the books. I think just giving the Board an idea of what a new reasonable deadline would be for Maine would be appropriate, and making sure that the Board is okay with that new deadline for Maine. The same would go for Massachusetts.

CHAIR BORDEN: Megan, does that answer your question?

MS. WARE: Yes. I mean I think we'll just have to go back and look at our regulatory schedule, and see what we can get done. I think it will be a stretch to get it done by January 1st, but we can provide an update to the Board, obviously depending on how all this.

CHAIR BORDEN: Okay, so does staff have any perfections to the motion, changes?

MS. KERNS: David, it's not a perfection, maybe it is. Justin already went over this, and Tom and Dennis

did agree that this motion is approving the implementation plans, with the exception of the exemptions. I don't know if we need to put that in a parenthetical, just so it's very clear to everybody what they are voting on.

MR. FOTE: Toni, I have no problem putting that in the motion.

MR. ABBOTT: Good with me also.

CHAIR BORDEN: That is the intent, and I would ask that that intent be reflected in the minutes. Is everyone ready for a vote on this? If not, raise your hand. Okay, so all in favor.

MR. APPELMAN: Megan Ware has her hand up.

CHAIR BORDEN: Megan.

MS. WARE: I'm so sorry. I just asked a question to the maker of the motion, and I think we were going to get back to it after break. I just want to clarify that this is saying any troller can't have bait unless it has a circle hook. I'm just trying to see if that is the output kind of this main motion.

CHAIR BORDEN: Tom.

MR. FOTE: Yes, I guess the motion says exactly what it says.

MR. ABBOTT: Yes, I mean this was decided some time ago. To use live bait, you had to use a circle hook. I mean that's already in my opinion law.

CHAIR BORDEN: All those in favor of the motion please signify by raising a hand.

MS. KERNS: Hey David, I have District of Columbia, NOAA Fisheries, Pennsylvania, New Jersey, Virginia, U.S. Fish and Wildlife Service, Rhode Island, Maine, Massachusetts, New Hampshire, Delaware, New York, North Carolina, Maryland, and Potomac River

Fisheries Commission. I will put everyone's hand down.

CHAIR BORDEN: Okay, all those opposed to the motion, please raise your hand.

MS. KERNS: I have Connecticut.

CHAIR BORDEN: Connecticut is opposed. Do we have null votes? Any null votes?

MS. KERNS: No hands are raised.

CHAIR BORDEN: Any abstentions? No hands are raised. The motion passes. Toni, would you give me the count, put the count in the actual vote count?

MR. APPELMAN: The count is 15 in favor, 1 opposed.

CHAIR BORDEN: My only suggestion here is it got a little tiny bit chaotic there at the end, in terms of the exemptions, Mike. My suggestion is that the Executive Director send a letter to the two states, basically that are affected by this. Notify them that they need to change their rules, and put in some of the reasons that would be reflective of the discussion. Does anybody have an objection to doing that? If not, we'll do that.

TECHNICAL COMMITTEE REPORT ON FACTORS LIMITING RECREATIONAL RELEASE MORTALITY ESTIMATES

CHAIR BORDEN: I was going to take a five-minute break here, but we're so far behind schedule, I think I'm going to keep going. The next item on the agenda is a report from the Technical Committee, in regards to the factors limiting recreational release mortality. We've got Kevin Sullivan who is going to give the report. Kevin.

MR. KEVIN SULLIVAN: Like I said, thank you very much, Mr. Chairman. I'm Kevin Sullivan. I actually serve as the Chair of the Striped Bass Technical Committee, and today I would like to present the TCs review of Factors Limiting Recreational and

Release Mortality Calculations for Assessments in the Striped Bass Fishery. As background, with the initiation of the development of Amendment 7 this past August, the Board identified a need to review factors limiting the accuracy of release mortality estimates for stock assessment purposes, and to identify potential actions that could improve understanding, or help reduce release mortality in the fishery. That was tasked to the TC, and the TC met on September 17 to address it.

Today we're going to cover the review of the release mortality estimates used in the assessment previously, how release mortality rates can be linked to MRIP estimates of live releases by year and state, and the recommendations the TC had for actions that could improve our understanding of release mortality rates, or reduce the number of releases in the fishery.

We'll start with the review of the existing information on striped bass release mortality rates. During the assessment process a literature review of the available information on release mortality of striped bass was conducted by the TC staff. The TC to this point has compiled a list of many studies across varying conditions of temperature, salinity, fish size, gear type, et cetera.

But the primary studies that the TC and the SAS have used are those listed here, Diodati & Richards, Caruso, Millard et al, RMC, and Lukacovic & Uphoff. Across all the studies there is a similar range in the estimates produced for studies that were conducted in brackish to salt water, as opposed to fresh water, which had different ranges.

Under the best conditions the mortality was as low as 2 to 3 percent, which was lower than the 9 percent value that had been used in the assessment, and in worse conditions they were as high as 27 percent, which is clearly much higher than the 9 percent that had been used.

In these studies, many factors are examined, including temperature, salinity, hook type, angler experience, hooking location, and injury.

In the TCs decision to use the Diodati & Richards '96 value, it considered the fact that it was conducted in salt water, which was appropriate because most releases in the fishery occur in the ocean, as opposed to in the Chesapeake Bay or the Hudson River. The TC considered the fact that the study incorporated a range of angler experience levels, which is probably representative of the MRIP sample of the general angling population, and the fact that the mortality estimate of Diodati & Richards was in a similar range to the other studies in salt water and brackish water.

During the exercise Dr. Drew had previously looked at a regression approach, which she presented to the TC. The approach had potential to apply a finer scale estimate to the fishery than those previously used for single line stock. But the difficulty was in the ability to apply the various factors, such as temperature, salinity, hook type, angler experience to the subsets of MRIP estimates that could be created using the information that is currently collected by the MRIP.

The TC came to the conclusion that only temperature and salinity can be linked back to MRIP estimates. In this tree diagram, looking at the temperatures and salinities it showed that the highest mortality occurred at the lowest salinities, with an apparent breakpoint threshold of a 7.9 salinity, with the highest mortality occurring below salinities of 7.9.

Similarly, for water temperature, the breakpoint appeared to be at about 25.65 degrees in high salinity water. Release mortality was the lowest in high salinity waters with cooler temperatures below that 25.65-degree threshold. When applying that tree of finer scale release mortalities, the average temperatures for state waters by wave and average, mid-Bay salinities by wave to get the finest scale estimates of release mortality it was found that it didn't make a difference. The takeaway from the

TC for this examination was that there is a disconnect between the finer scale of factors collected in the release mortality studies, compared to the scale of data collected by the MRIP.

The various studies included many different factors but the datasets that apply them to like MRIP don't collect those factors, such as MRIP using two-month waves, using very large nonspecific areas fished, and no incorporation of angler experience, fish injury, circle hook vs J-hook use, or days when hot air temperatures were present.

This was done, a review by data sources looking at a glimpse in the range of temperatures and salinities in relation to the breakpoint that we just talked about. It was found that the temperature, which is the figure on the left, only crossed the critical value once. I think that was the Chesapeake Bay, and the salinity never fell below the critical value, 7.9.

In conclusion, for this part of the TC task, the TC did not pursue the regression analysis approach that Dr. Drew presented, due to the uncertainties in scaling the studies to the MRIP estimates of live releases, and it was the opinion of the TC that the 9 percent coastwide estimate that was used is consistent with the results of this exercise.

All right, the second part of our task was to look at how live releases contribute to the striped bass fishery as a whole, along the coast. This figure shows the percent of striped bass released alive by year. Both the calibrated and the uncalibrated MRIP estimates, and the similarity between the two would indicate that the levels are not a function of the new, revised MRIP numbers.

Just to point out in the figure, there is a noticeable decline around 2006 onward, which probably shows several weak year classes worked their way through the population, with

less small fish available to the fishery. Then you can see percent release rebound as the strong 2011, '14 and '15-year classes entered the population right after that.

This figure like the last one showed the percent release, but it breaks it out by region. Chesapeake Bay, Mid-Atlantic and north Atlantic, and a lot of the regions do show differences in the percent of striped bass released alive, with the north Atlantic consistently releasing a higher percentage of striped bass than those released in the Mid-Atlantic or Chesapeake Bay.

Since 1990 the percentage released is consistently high overall in all regions. You can also see that the release rates dropped off in the Bay a few years sooner than on the coast. Like if you look at 2005 to 2007, and then rebounded sooner in the Bay if you look at 2010 and 2012. Those are also likely the effects of a weak and strong year classes being seen earlier in the Bay.

This figure is looking at the number in millions of striped bass released alive between 2015 and '19, and you can see from this that the highest F with number of released fish occurs in Maryland, Massachusetts, New York, and Connecticut. Similarly, to the last figure, but now this is in percentages instead of absolute number of fish released. You can see that Maryland, New Jersey, and New York released the lowest percentage of striped bass caught, meaning they retain a higher proportion of their catch.

But again, the percentage released is still high across all states. After that exercise of reviewing those aspects of the fishery, the TC discussed what actions they thought the Board could possibly take to get a better understanding of discard mortality or reduce the total mortality in the fishery, due to the high number of releases.

The TC identified three possible actions, all with varying levels of time and resource required. The three actions that are presented on the following slides are ranked according to time and resources

required from low to high, not in order of priority. The first action the TC identified was the potential to conduct a sensitivity run on the current stock assessment model, using varying release mortality estimates to examine the impacts of more refined release mortality estimates.

The TC thinks this would be a short-term time requirement, and if the Board did want to pursue this it would be accomplished and presented within one or two Board meetings from now, or it could be completed as part of the next benchmark assessment. This task would require only a moderate amount of resources, such as TC member time.

The second possible action the TC had was to refine the regression approach that Dr. Drew presented to the TC, incorporating finer scale release mortality estimates. The TC felt this was also a moderate term action, possibly done as part of the next benchmark assessment, which although not formally scheduled would be either 2024 or 2025, and this task would also require only a moderate resource by TC members during the next benchmark.

Finally, to get a better estimate of release mortality, factors that are able to be linked back to the scale of the MRIP estimates. The Board could take action to coordinate or fund a comprehensive striped bass release mortality study along the coast. The details of this study were not delved into during the meeting, but it is thought it would require considerable amount of planning and study design, making it a much longer-term action and highly resource intensive, including the time of TC members, research partners, and potentially funding the study.

Of the three actions that I just mentioned, the first two will improve understanding of how the issue affects the assessment, but it won't actually reduce the release mortality in practice. Third action of conducting a study could provide

better information, but the TC agreed it is unclear whether a comprehensive study would really reveal anything new that we didn't already have. A point of discussion amongst the TC is that there are two components to reduce total discards, dead discard, discard mortality.

The first is reduce the release mortality rate itself, so more of the fish released survive, but the second component, which was discussed less but is also present, is using management options to try to reduce the total number of striped bass release that are caught and released. For reducing the rates of a fishery, the TC identified possible angler education and outreach on best practices, as well as requiring best practices through regulations such as circle hook requirements that we just spoke about. Then for reducing the number of striped bass that are caught and released, the TC felt that would require regulations to reduce overall effort, such as seasonal closures. Then again, outreach and education explain to the angling public the potential risk of releasing so many fish alive.

After these actions what are the next steps, the TC asked. Should the TC work on Action 1, which was conducting the sensitivity analysis of differing mortality rates in the third model, and should it be done before or during part of the next assessment? Question two, does the Board want to prioritize a larger comprehensive coastwide study, including identifying funding sources and beginning to develop a study design?

Then this is just some questions that the TC discussed during this exercise that are for the Board to consider. They raised the following questions. What are the management objectives in the fishery? Specifically, is a high release rate a bad thing for a predominantly recreational fishery? Two, do we really want to convert dead discards into harvest?

Does the Board want to reduce dead releases at the cost of reducing effort and trips, which is what would likely occur if seasonal closures were put into place? How does the Board want to allocate and

manage those total removals between harvest and release mortalities as a move into the process of initiating Amendment 7? Thank you that's it, so I'll take any questions you might have.

CHAIR BORDEN: All right, questions for Kevin. While I've got my microphone open, thank you very much to you and the members of the TC for following up on this. For questions I've got Tom Fote he has his hand up.

MR. FOTE: Yes, thank you for the report, it really was interesting to me, because I know a lot of these studies depended on water temperature, and as you pointed out it affected the hook and release mortality. It's interesting, because instead of having lunch today, I went back on my MAFAC meeting.

There was a presentation by Dr. Warner, we started talking the same way we did yesterday with Chris Oliver, when he was on the line about hot water and how it's affecting the fish, and how it's affecting migration, how it's affecting nearshore and offshore. Now when I just thought of that, we get all these studies based on what we assumed back 20 years ago was water temperature.

Now with the water temperature changing, now the Bay is a lot hotter, longer periods of time. The Bays and even the Gulf of Maine. I looked at these heat events and I couldn't believe it, how much the Gulf of Maine and New Jersey were affected, and the New York Bight was affected. Is that going to have an effect on the hook and release mortality, since we estimated that we did a lot of this recreational fishing when the water was cool.

I always said, we could fish in November and December, and basically hook and release, and we wouldn't have high mortality. But as we find November is when the water temperature is still 60 degrees off New Jersey and New York, and we're basically increasing that hook and

release mortality or 50 degrees. That's something that I don't know if the TC had looked at all. I also asked Dr. Warner if he can make a presentation to the Commission, because I just found the whole study fascinating.

MR. SULLIVAN: This is Kevin. I'm not sure if that was a question, but you definitely made some good points. The TC discussed that from the spreadsheet and studies that we have, the range of mortality rates, including the factors, stretch the whole gamut. We do realize that a higher water temperature the mortality rate is considerably higher. But like we said, the problem for us was trying to link it back to MRIP data that was on a fine enough scale to put temperatures to the catch. But a comprehensive study might be able to find ways to include that.

MR. FOTE: Yes, because looking at the charts that they basically presented today that we know what the water temperature is, and we know what people are fishing, and we could basically look at the water temperature and collate those factors. That was my question is whether you looked at it or not. Yes, you did look at it, thank you.

CHAIR BORDEN: Thanks Tom, I've got Jason McNamee and then John McMurray.

DR. McNAMEE: Thanks Kevin, thanks for walking us through that. It was pretty cool stuff. I have maybe a quick, I missed one detail on the regression tree. What was the data used? Was it raw data from all of the individual studies, or was it from one particular study? I missed what you used in the regression tree.

MR. SULLIVAN: I think Dr. Drew is on. She is probably better suited to answer that.

DR. KATIE DREW: Sure. Thanks, Jason, good question. What we did is we had a number of the different studies, and each of the studies reported a release rate for a specific condition. They would be like, this was the condition where the average

salinity was this, and the release rate and the mortality rate were this.

We didn't use the raw data, but we used those point estimates for the different conditions from the different studies that we looked at to come up with this approach. I think obviously it would be better if we had the raw data to really dig into this, but it was really more of a meta-analysis, with the separate individual conditions and the release rates associated with those conditions.

DR. McNAMEE: Thanks for that, Katie. Yes, that makes sense. I have another comment that I'll park it and let others have a chance, and I'll raise my hand again in a couple minutes.

CHAIR BORDEN: Jason, if you want to keep going, I've only got one name on the list, so just ask your question at this point and then I'll move on to the next person.

DR. McNAMEE: My follow up then is kind of getting at the next steps. I almost wonder if they are related. You know I think the ideal would be to do kind of a coastwide study where we're collecting all of these rows of information, and so we have a really robust and succinct dataset with all of the information that we need, so we can kind of reanalyze that. But that's expensive, and so I almost wonder if your first proposal that you made with doing some sensitivity analyses to see what it would actually. You know you could get a sense of the tradeoff. If you did the sensitivity analyses first, and maybe you find that it doesn't matter, or maybe you find that it matters a lot. From that you could then have a little bit more information to move forward with. Yes, this is a significant enough impact to warrant a big expensive coastwide study. It sounded like a comment, but I'll turn it into a question, and that is, did you guys talk about sequencing these, or the interaction of these three next steps done that you proposed at all? Is there some logical sequence to them?

MR. SULLIVAN: Sure Jason, thank you. We didn't really talk about the sequence. We basically ordered them in terms of what was achievable first. Obviously, the easiest one was the exercise of the stock. Should we look at the sensitivity analysis, and there was going to be an attempt to try to get it done, but we didn't have enough time.

That would be the easiest, and I think you made a great point in showing us that that might kind of help us figure out if there is a need to move on for further action. But the second one was, I think we just said that generally a part of the assessment process anyway, so we would just incorporate that as one of their components.

But then I think like you said, the last one, the comprehensive plan, everybody we had some discussion, but realized that it would be a very complicated program, which would require a lot of design to make sure it incorporated the factors that we do see in the fishery, and then also try to incorporate ways that we want to get information that we can use, because there are a lot of studies out there that have factors.

But we have not way to relate to the catch data that we have. I think the progression would be the first one that is on there now, the sensitivity runs, and we could do that fairly easily, and then from that we would feel out how much more work we should put our time and energy into. Does that answer it?

DR. McNAMEE: Yes, that was perfect, Kevin, thank you.

CHAIR BORDEN: I've got John McMurray.

MR. McMURRAY: I'm not clear of what the goal of all of this is. What do we want to achieve with all this work we would be tasking the TC to do? I mean there is always going to be discards in this fishery, because it is primarily a sport fishery. That is not likely to change. While we may get a different percentage of dead discards, I'm pretty certain it's going to be right around that 10 percent number, you know give or take a few points. I think it's going

to be very difficult if not impossible to reduce it. My question is, what is the goal? What do we want to get out of this?

MR. APPELMAN: Mr. Chair, this is Max. If I could offer a response. I think John, coming out of the 2018 benchmark assessment, there was a lot of attention drawn in this sector of the fishery the catch and release component that the contribution of mortality to total mortality was a shocker to a lot of people. I think there was just a general misunderstanding around the Board table, and among some of the public of you know, why is it so high, how is release mortality estimated in the assessment? Where does the 9 percent come from? I think a lot of this task, and I don't mean to put words in the Board's mouth, was just to take another opportunity to explain where that number comes from, how it is calculated, what are the limitations for doing it differently, and things of that nature.

I think this was just an information exchange. I would point out that discard mortality, release mortality was highlighted as a major issue for the next amendment, so there will be plenty of opportunity in the amendment process to discuss about possible actions to address release mortality.

MR. McMURRAY: Thanks, that's a good clarification. I just think that there is a simple expectation that we're somehow going to address this work, and that doesn't seem to be the case, from my perspective anyway. But thank you for your answer, nonetheless.

CHAIR BORDEN: I have no further hands up, so Kevin, if you proceed with a sensitivity analysis, what would be a reasonable time for the Board to expect a report on that?

MR. SULLIVAN: I think the consensus of the TC, and there were some members that were interested in it. We could possibly get it done within one meeting, which I'm not sure, is that

February, and if not by two meetings we could definitely have it for the Board, you know in time for the second meeting.

CHAIR BORDEN: Thank you very much for that. It sounds like there is some merit in doing this. It doesn't sound like it's a huge hurdle for the TC to do this. Does anyone object to doing this, taking that first step? I would point out that while I'm talking about this point. This is one of the issues that is kind of imbedded in the PID.

What we're going to have is a great deal more information directly from a constituent that are most affected by it at some point in the future. I think the key would be to bring these two sources of information together, and then decide on if we need to do something differently, and what we need to do. Are there any objections to asking the TC to proceed with the first step, which is a sensitivity analysis? There are no hands up, so without objection, Kevin you've got a new task.

MR. SULLIVAN: Sounds good. We're excited. Thank you.

CHAIR BORDEN: Once again, thank you for your work on this, and thank you for all the work of the TC members. The next item on the agenda is the PID, and I just point out as background. This issue came up a number of meetings ago. The Commission basically decided to put together a workgroup. The workgroup identified a number of issues that they thought needed additional work.

Then at the last meeting we basically agreed that we shouldn't prioritize these, that we should take all of the issues out to the public, and the Plan Development Team then took that off the desk into a PID document. Now, the one point I would like to emphasize on this is the Public Information Document. It does not commit the Commission to any particular course of action. These types of documents are almost by their origin necessarily somewhat vague, at least. You don't get into all of the new shift, because what we're doing is really looking for public input on the issue. I would just

factor that into your comments and suggestions. The only suggestions that I've heard, and I don't know whether I'm up to date on any suggested changes.

But the state of Delaware has raised some concerns about the language in one of the sections, and when we get to that I am going to recognize John or anyone else from the Delaware delegation to comment on that, so that they can bring people up to speed on their concerns. I'm also aware that they have suggested and put forth some alternative language to modify that section in some manner.

With that is just a little bit of information. I would like Max to introduce the document. I would just state for members of the public again, that this does not commit the Commission to any particular course of action. You would need to come back at the next meeting, or a subsequent meeting, and basically put together a prioritized list of issues that we want to fold into an amendment.

Keeping in mind that the last amendment was in 2003, and there have been significant changes both in the fishery and the science since that. Just factor that into your thinking Max, if you would. Would you go through each of the issues, and I ask you to introduce, take it section by section? That way we won't cobble together points on different sections. We'll take the first item in the PID, and then I'll take questions and I'll move on the numbers. Max.

MR. APPELMAN: Yes, I think I follow. I'll go one issue at a time, and pause in between each issue and bring it back to the Board. Is that correct?

CHAIR BORDEN: Yes.

CONSIDER DRAFT AMENDMENT 7 PUBLIC INFORMATION DOCUMENT FOR PUBLIC COMMENT

MR. APPELMAN: I do want to first thank the Plan Development Team for their work over the last six weeks or so. This was a pretty big task; time was definitely not on our side. Luckily, we had nine development team members, and it was great to have that many folks involved. Typically, we have about five or six.

Everyone was able to pitch in and write a piece of this, and get this document done in time. But it definitely made it a challenge near the end to give the document a cohesive narrative, a single voice. But that said, I'm very impressed with how much ground has been covered in such a short amount of time.

This is a reminder about the process, and Chairman already went over this a little bit, but the PID is really the first step here. It's a broad scoping document. It announces the Commission's intent to gather information on the striped bass resource and fishery. It provides opportunity for the public to weigh in on which issues are important, and identify any management alternatives.

Typically, PIDs do not provide any specific alternatives, instead it asks questions to garner that sort of feedback. The next step would be the draft amendment, which is much more focused and narrower in scope. It does include specific options designed to address the issues that are moved forward. Again, there is another opportunity for the public to weigh in and provide comment on preferred options. As far as the timeline, the timeline up on the screen shows final action would occur at this time next year. I recognize that to some Board members this might seem like an aggressive timeline.

There actually is a bit of a buffer worked in here for the draft amendment phase, an extra Board meeting to provide additional feedback to the Development Team. But you know this is sort of

viewed as the shortest timeline to completion. Again, we're talking about approving the draft Amendment 7 PID for public comment today.

As the Chair pointed out, the Board has already identified nine separate issues that are the highlight of this PID. These issues are very complex. There is a lot of moving parts. It's very challenging at times to state the concerns or challenges in a simple way. They are also very much overlapping in nature.

It was not easy to find the right balance of information for this document, considering the intent of the document, a scoping document. The Development Team thought it would be most constructive to try to isolate these issues as best as possible, which I'm sure you've seen wasn't always possible to do.

I'm just really focusing on the underlying challenges and concerns. We'll take these one by one. I'm not going to provide much of the background information, I'm going to assume the Board is aware of previous background material for each of these issues, just focusing on the statement of a problem. The types of questions that are being asked of the public, the focus, feedback.

I will note that the AP did meet in September to provide feedback on the development of this document, and I'll point out as we go through, you know particular areas where the AP was focused, and how those comments were either addressed into this document, or were reiterated. Again, after we get through each of these, I'm really looking for feedback on any of the core issues that might have been left out or overlooked, or anyway that these topics have been mischaracterized.

But I don't think that needs small editorial changes to be discussed today. If there is any small wordsmithing, grammar and things like that, just shoot me an e-mail or tell me, and we can work that into the document. Okay, first

issue is goals and objectives. I think the general concerns and challenges here are fairly straightforward, as the Chairman said.

The last comprehensive amendment for striped bass was in 2003. The goals and objectives for this fishery are detailed in that amendment, Amendment 6 that are described in the PID. The general concern here is that these goals and objectives may be outdated, no longer reflecting the current needs and priorities of the fishery.

This is really an appropriate time to revisit those goals and objectives, and ensure their consistent with current fishery needs. As far as public comment questions, we're looking as are the existing goal and objectives of Amendment 6 still in line with the current needs and priorities. Which specific priorities are missing from the goal and objectives? Which of the existing objectives should be removed or refined, and do the existing objectives balance the need for management stability, flexibility, and regulatory consistency? Recall that those were the three themes that the Board identified through the workgroup to help guide future management for striped bass. I'll pause that Mr. Chair, and hand it to you.

CHAIR BORDEN: On Question 4, Max, any questions, any hands up? It not, we'll just assume that we won't make any changes to this, so I have no hands up. Max, you can move on to Issue 2.

MR. APPELMAN: I see one hand by Ritchie, but he just put it back down. I guess I'll continue on to the next issue. Issue 2 is biological reference points. This was definitely a bigger topic for the development team, a tough one to approach. It is very closely tied to some of the other issues in the management document during the PID, regional management in particular, also the management triggers, which are tied to the reference points.

The direction that all the team took with the RPs is really focused on metrics that Amendment 6 uses, as well as previous management documents have used to determine stock status. How overfishing

and overfished status is defined. There is not much reference about the use of other fishing mortality rates to craft individual programs. That is reserved for the regional management section.

We're really focused on metrics used to determine stock status. As a reminder, the current reference points are based on female spawning stock biomass in 1995. That serves as the threshold. The target biomass level is 125 percent of the threshold, and then the fishing mortality rate target and threshold are designed to achieve those SSB targets and thresholds over the long term.

These reference points have been rooted in this 1995 estimate since 2003. At that time the stock was thought to be well above the target level of the latest assessment information available at the time of the development of Amendment 6 showed that the stock was above the target. The primary concern we've been hearing is that the perception of stock performance has changed considerably over time, with each iteration of the stock assessment model.

Those changes are more pronounced with each benchmark assessment when there is new data involved, in some cases better data is incorporated. Advancements in modeling are incorporated into the management framework. We're trying to show that story a little bit in this figure. This is the last four benchmark stock assessments, going back to 2002, which was the assessment that informed the development of Amendment 6.

The values of that 1995 value has changed over time, the magnitude of that value. The perception of where the stock was in 1995 relative to our current understanding of the reference points has all changed, and so raises the question of, if this really is still an appropriate benchmark for the species.

The PID then goes into the types of alternatives that are available to the Board now versus down below. You've heard a lot about this two-stock model that was developed as part of the last benchmark assessment. One of the goals of that model is to develop stock-specific reference points for the Chesapeake Bay, and for the ocean region, which includes the other stock components. Well, that model is not available for management use right now. It did not pass peer review. That is still under development, and the SAS and the TC, we'll all continue to work on that model, but it's not ready for management use at the moment.

Unfortunately, model-based reference points aren't really available to the Board right now either. The current assessment model produces unreliable estimates for SPR, although there was some evidence with the two-stock model that that could work there, but again the two-stock model is not available. The Board is somewhat limited to other empirical-based reference points for the near term.

You know is there a better reference here other than 1995? Is there a better buffer for the target, something other than 25 percent, or is there some entirely different empirical approach that the Board should consider, which brings me into the public comment questions? Is the 1995 estimate still appropriate?

Is there a better empirical reference year or approach that should be considered? Is there a different buffer that should be considered for the target? Should the Board continue to prioritize development of model-based reference points or stock-specific reference points, and lastly what stock characteristics should the BRPs attempt to achieve? That is all I have for reference points, Mr. Chair.

CHAIR BORDEN: All right, thank you, Max. Questions, Mike Luisi.

MR. LUISI: Not necessarily a question, but just maybe a suggestion. Max, in the document there is a reference to a possible adjustment to reference

points. I think the example you used was based on, you know 1993 being set as the threshold, rather than 1995. I wonder if there may be another example that you could consider adding, which would be instead of starting at the threshold and working up to the target.

Perhaps you start at a level for which the public wants to see the target set, and come up with a different strategy on where that threshold might fall, based on some other formula or some other calculation based on where the target would begin. You know as an example, if you set the target and then, you know one half of the target would be considered the threshold, as in other fisheries. Maybe that is just something to think about. It could be another example to put into the document to give people a little bit more to stew on. That's all, thank you.

CHAIR BORDEN: I've got John Clark.

MR. CLARK: Thank you, Max. I'm glad you have that graph up there showing how the perception of SSB is determined by the reference points has changed over time. During the early 2000s the general consensus was the striped bass population was at a historic high, and yet as that SSB graph shows. Going by the reference points it went from being well above the target to above the target to under the latest assessment, during that period where the stock was just huge, it didn't even reach the target. If there was just a sentence in there just to kind of put that into perspective how that changes, I think it might be helpful to the public, to help them understand how these reference points affect our perception of the stock, and how they change with different assessments.

CHAIR BORDEN: Does anyone object to doing that? What I would suggest for simplicity's sake is that we put together a list of these types of perfections, and then kind of circulate them to make sure they are reflective of the comments the Board members have made. Any objections

to that? I see Adam Nowalsky. Adam, do you want to object?

MR. ADAM NOWALSKY: No, that was not an objection. That was going to bring up another comment.

CHAIR BORDEN: Okay, so I have no objection to that, so the staff will add that to the list, and kind of circulate that following this discussion. Adam, you're up.

MR. NOWALSKY: Yes, thanks. I was wondering what staff's thoughts were about being able to take this Figure 2 that talks about the F, and being able to elaborate in a little bit more detail in the document about the contributions of discards more recently. I know we've got discussion in here about discards in other places.

But specifically, with regards to the F here, clearly, we think we know that a large contribution of the recent F is coming from discards. I'm just thinking it might be appropriate to either try to break that down as part of that fear, or at least allude to it, even though I know we've got more of a discussion about release mortality later in the document.

MR. APPELMAN: Yes, I was trying to highlight that in the beginning. The PDT really tried to isolate these issues as best as possible. I think the general magnitude of release mortality is discussed at length under that section. You know I think we made an effort to isolate that and just focus on what the reference points are, how they're used, and how they've been used in some other examples of reference points for this section.

CHAIR BORDEN: Adam, would it be all right to include that when we get to the release mortality section? Does that satisfy your suggestion?

MR. NOWALSKY: I don't recall that Section 7, and I'm just trying to refresh myself here, had a percentage of F from discards relative to harvest. I think that if staff feels there is enough discussion about it in Issue 7, I would suggest that perhaps we

just reference that discussion that is in greater detail.

In Section 2 we talk about Issue 7 has more information about the contribution of discards to F. Then when we get down to Issue 7, if we don't think the contribution of discards as a percentage of F are discussed enough, then I would suggest we add more detail about it to Issue 7.

MR. APPELMAN: If I could just jump in again. Yes, I see what you're saying now, Adam. I'll just offer, and Katie can correct me if I'm wrong. I don't think we can break out fishing mortality by the release mortality component. I think we can provide those in numbers of fish, which we do in a lot of documents. I think there is a table at the end of the PID that shows that. But as far as a proportion of fishing mortality, I don't think our model produces that.

DR. DREW: Yes, this is Katie. Max is correct. We don't have fishing mortality from the release of the discards versus fishing mortality from harvest. We just have it by the Bay versus the ocean region. But the numbers of fish from each source could be considered a proxy for that kind of information, and that is included as a figure in that section. But I think we would be hesitant to say this is X percent of the total fishing mortality. We could definitely say it is X percent of the total removals though.

CHAIR BORDEN: Adam, is that acceptable?

MR. NOWALSKY: I think that the most recent comments highlight that staff understands what I'm asking for and if they think there is something, they can add to the document to help get that information for the public, great. If they feel they've done the best job they can, then I'll say thank you at that point.

CHAIR BORDEN: Max, do you want to move on to Issue 3, please?

MR. APPELMAN: Sure. Issue 3 and Issue 4 have actually been combined together here. That is the management triggers and the stock rebuilding target and timeline. The decision to do that is you know they are so closely intertwined and linked together, that the stock rebuilding target and timeline are essentially the artifact of the triggers themselves.

You know this was also a tricky topic to approach. A lot of the concerns with how the management triggers are set up, are also an artifact of how our perception of stock performance has changed over time. First, I'll just say that the triggers are outlined in the PID. They are tied to the reference points and there is a recruitment-based trigger as well.

One of the concerns that we've heard is that the triggers require action on different timelines. That comment usually is referred to the reference point-based triggers. For example, the fishing mortality triggers require quick, corrective action. There is a one-year timeline there, because F can be reduced quickly by reducing total removals in the fishery.

However, the spawning stock biomass triggers allow changes to occur over a longer period of time, up to ten years reflecting the biology of the species, long-lived, late to mature, so effects of rebuilding plans aren't often realized until that protected year class or classes grow into the spawning stock.

Just to add to this conversation, the recruitment-based triggers are tripped when an individual JAI or juvenile abundance index shows three consecutive years of recruitment failure. There is a three-year review cycle associated with the recruitment triggers. The concern here is that these are all speaking on different timelines.

There is some conflict there about management stability, when action can be required so quickly. The other shortfalls of how the triggers are designed are really tied to the changes in perception of stock performance over time. Again, these triggers were developed in 2003, at a time when spawning stock biomass was thought to be at

record high levels, you know well above the target. During that same time period, the early 2000s, the reference points for fishing mortality were also calculated differently.

The resulting time series from those failure assessments in the 2000s, showed that fishing mortality was well below the target consistently. We're trying to show that same story in these fishing mortality plots on the right side of the screen. Fast track to the 2013 benchmark assessment. We have new fishing mortality reference points now; they are linked to the spawning stock biomass reference points.

They're speaking on the same page that we now see that they have not been, the F time series have not been below the target like we previously thought. Instead, it's been bounding around the target, and then even most recently it has been above the target for most of the time series. Since 2013, or I should say from the initial years of Amendment 6 until 2013, the Amendment was sort of coasting along, and these triggers were never tripped.

Now, with our new understanding of stock performance, our new understanding of where the fishing mortality rate has been relative to the reference points, we're in this period where there is a constant need for action. To that end, the Board is sometimes criticized for reacting off of this variable single-point estimate of fishing mortality. Knowing that that is a variable estimate, it's still responding off of the single-point estimate there. Also, not allowing enough time for the stock to respond to the most recent actions.

Then this other bullet up on the screen. This was raised by a few Advisory Panel members, really keen on the period of variable, but below average recruitment that the stock experienced in the early 2000s, and that perhaps if this recruitment-based trigger were designed differently, the Board could have responded to

that low period of recruitment and acted on it, and perhaps the stock would be in a different place.

The comment here is that perhaps the recruitment-based trigger is not designed appropriately as well. As far as questions to the public. We're asking which management triggers should be revisited, what is an appropriate timeframe to respond to overfishing or overfished determinations?

Should the F-based triggers account for that annual variability in fishing mortality, and what is more important, rebuilding the stock quickly or mitigating impacts to fisheries? In other words, do you prefer significant changes to rebuild the stock quickly in a short amount of time, or smaller incremental changes over a gradual, longer period of time to rebuild the stock? That's it for management triggers and stock rebuilding.

CHAIR BORDEN: Questions. Jason McNamee.

DR. McNAMEE: Yes, Mr. Chair. I wonder if an additional question might be appropriate, and that is are triggers needed if the assessment is being done every two years? You know if there were big gaps between runs of the assessment, I understand the desire to have these triggers. I do agree with the Review Team and the comments that you made, Max. They are hard to pick. You know you want to strike a balance between having something that is constantly triggered, and something that never gets triggered. It's hard. We did this with menhaden for years. I don't know.

I wonder if adding a question that asks about the need for triggers, given that I think the assessment is getting done like every two years at this point, or something like that. I guess, you could check me on that comment, how often the assessment is getting done, and then the rest of it kind of falls from that.

CHAIR BORDEN: Max or Katie, do you want to comment on the assessment schedule?

MR. APPELMAN: Over the recent history the assessment has been updated at least every two

years, and sometimes every year. But about every two years, and there is a benchmark every five or so. No more than a two, three-year gap in between assessments. I think that is a fair question to add, definitely. I should have mentioned that these triggers are not just associated with the reference point threshold, but also the target and threshold, so for those that aren't familiar with the triggers, they are tied to target and threshold. I think that is a fair question.

CHAIR BORDEN: All right, Jason made that suggestion. Does anybody object to adding a question like that? I don't see any hands up. Other points on this section before I move on? There are no hands up. Let's move on to Section 5.

MR. APPELMAN: Sure. Okay, Issue 5 is regional management. As I said, you know this was a very challenging topic to address. There are a lot of different ways to think about regional management. The concepts there overlap with other issues in the document, like reference points, conservation equivalency, and a recreational accountability, which we'll get into later in the document.

All of those topics, issues, have questions about being done coastwide or at the regional level. The PID really discusses regional management in a historic context of how regional management has been done under Amendment 6, and in previous management documents. It focuses on that underlying challenge that the stock is managed on a coastwide basis, but fisheries operate very differently throughout the species range, due to the size and availability of fish, and the wide range of fishing cultures and priorities.

Under Amendment 6, which was an extension of previous management documents, the amendment allowed certain regions to manage their fisheries independently under a different F rate than the rest of the coast. Chesapeake Bay

and the Albemarle, Roanoke System in North Carolina. Under Amendment 6 we're operating under a different F rate, and allowed those areas to implement different size limits, seasons, harvest limits, et cetera.

There was data in modeling techniques to support development of these different management programs under separate F rates. Enter Addendum 4 in 2014, now all these areas including the rest of the coast, are managed under the same F rate, the coastwide fishing mortality reference points. We're now back to this coastwide management framework, and there is again the PID talks about the two-stock model that is under development, brings that back into discussion here. One of the intended goals of that model is to develop separate F rates for the Chesapeake Bay stock, and the ocean region, which includes all those other stock components. But again, that model is not available for management use.

That said, there are assessment tools available for the Board to use now, to pursue separate management programs for Chesapeake Bay and the ocean region. The current stock assessment model does model removals into two separate fleets, the Chesapeake Bay and the ocean region, and although the F reference points would still be set for the entire coastwide complex, the Board could allocate this total F to those two regions.

In a way the Board is already doing this, however implicitly. The current management programs, for example. If you think about the measures that are in place in Chesapeake Bay, we'll call that the Bay program. That produces a certain level of fishing mortality, or a proportion of the total mortality

The Board could determine what that proportion of total mortality should be, and then you would work backwards to craft a management program that achieves that allocation of F. Of course, that raises other questions about what is the appropriate allocation of F between the two regions, or how would accountability for that sort of management framework look, which brings us into some of the

public comment questions? Should separate regional management programs be pursued for the Chesapeake Bay and the ocean region?

Again, those are the tools that are available now. If so, how should the Board determine the appropriate allocation of fishing mortality between these regions, and three, should development of similar assessment tools be prioritized to support regional management for other areas of the coast? Essentially exploring adding new fleets, other fleets to the current model. There is also an implication here to ask if they will continue working on the two-stock model. That is it for regional management, Mr. Chair.

CHAIR BORDEN: Questions. Does anyone have a question for Max? I've got John Clark, John.

MR. CLARK: Just because it's an issue that will come up under several of these things. When you talk about regional management, if it could just be made a little more clear that we don't see Delaware Bay as part of a Delaware Bay/Hudson complex. I understand for the two-fleet model, but if it could just be made clearer that regional management could be expanded to include, going back to the terminology of Amendment 5, producer areas such as the Delaware.

CHAIR BORDEN: Max.

MR. APPELMAN: Yes, thanks, John. I know this is definitely a part of the other concerns Delaware has had with this document. I just wanted to I guess reiterate that the Development Team really tried to focus on the way different F rates were used to manage particular regions, and then highlighting similar tools that are available to the Board now, versus I'll call them research priorities to create those similar assessment tools to support the development of regional management programs for other areas like the Delaware Bay System, for example. I think this section does a

good job of isolating that out. When it comes to the term producer areas, the PDT was pretty deliberate about not using the term producer area, because it has been used inconsistently in previous management documents, and was largely absent from Amendment 6.

Instead, calling areas by their name instead of lumping them under a term producer area. The PDT decided not to use that term. However, if the Board is able to provide a clearer definition, if you will, of what is a producer area for this document, I think we could fold that in. I have no problems talking about producer areas in a historic context, but to continue to use that term, we decided not to for those reasons.

MR. CLARK: I understand that Max, and thank you for that explanation. It's more just a sense that with just putting it always the Delaware/Hudson Complex as part of the ocean, it doesn't really show that there would be any possibility to do anything different. You know it really doesn't need much change, I just thought there might be a little contradiction between some of these issues, and as you know the issue that I was going to bring up under Issue 9. That's all.

CHAIR BORDEN: John, my suggestion is, I know you want to bring this up under Item 9. If we visit it at that point and see whether or not you're satisfied with the resolution of it or not at that point. Is that okay?

MR. CLARK: Sure, that's fine.

CHAIR BORDEN: Let's see, I've got Tom Fote.

MR. FOTE: I had the same concerns with John Clark. If we're going to address it in Issue 9, I'll wait until then.

CHAIR BORDEN: All right thanks, Tom. I have no other hands up, so I'll move on to Number 6.

MR. APPELMAN: Next issue, conservation equivalency, another challenging topic, as you all

are aware. Again, very closely tied to regional management and other concepts. The concerns and challenges of regional management are very similar with conservation equivalency. There is also a significant amount of overlap with recreational release mortality and accountability, which we'll get into the next few issues.

Conservation equivalency, CE, has received a lot of attention lately, as we know, particularly following the Addendum IV process in the Chesapeake Bay, and then most recently with the Addendum VI process. As I mentioned, you know striped bass are managed on a coastwide basis. However, we know fisheries operate very differently throughout the range.

It makes it very hard to develop these one-size-fits-all measures for the entire fishery. That is where the value of conservation equivalency comes in for striped bass. It's been an integral part of this program for decades. It's used in a number of other Commission managed fisheries as well. The general intent and application of CE is detailed in the Commission's CE Guidance Document and Policy Document. As a reminder, as far as process. States are required to develop a proposal that details how the proposed measures are equivalent to the standards in the FMP that proposal is then submitted for technical review. There is subsequent Board approval before it is implemented, and then following a year of implementation, the Plan Review Team reviews the effectiveness of those proposals or of that program.

You know there is definitely a value in CE, but there are a number of concerns and challenges that arise with this type of flexibility, particularly during periods of low stock size. The AP was particularly keen on conservation equivalency and the concerns and challenges. One of the first conflicts here is that it creates inconsistencies between neighboring states and within shared water bodies.

A concern that we have heard repeatedly by law enforcement it makes it more challenging to enforce, and compliance is improved when measures are consistent across states, and within the same fishing areas. One of the other concerns or challenges is after a CE program has been implemented.

It is very difficult to evaluate the effectiveness of that program, particularly the recreational CE programs, because of the impacts that angler effort, angler behavior, the different cultures there, the availability of fish can have on catch rates, particularly as a release component. Again, those are sort of precursors to Issue 7 and 8, but that is an underlying concern with effectively implementing and then reviewing conservation equivalency proposals.

Another concern that has been raised is the data that is used for crafting CE proposals, again particularly recreational proposals. They rely heavily on state level data, MRIP data which are less precise, higher PSEs than regional or coastwide estimates. There is concerns about that imprecision and how it's being used to craft these measures.

We've also heard that although there is guidance for how and when CE programs should be pursued or can be pursued, but perhaps there should be a little bit more guidance in there around stock status considerations, or the number of proposals that can be submitted. As we saw with Addendum VI, there were upwards of 100 different CE proposals, which made it very cumbersome for the Technical Committee to review in an effective and efficient manner.

It also made it difficult for the Board to make decisions on those proposals. Then the last bullet on the screen here is, and if there isn't a consistent definition for equivalency, these decisions are often made on an ad hoc basis. As we saw with Addendum VI, the coastwide measures were designed to achieve an 18 percent reduction collectively along the coast.

We know that states were going to feel different impacts. However, the Board decided to allow conservation equivalency, as long as the state could show an 18 percent reduction at the state level, which may not be equal to the reduction it would have achieved under the coastwide measures. That leads into some of the questions here.

Should CE be part of the striped bass FMP? Should the Board restrict the use of CE, based on stock status information, based on data usage, or the differences in regulations across neighboring states? Should more quantitatively rigorous and defined data requirements for proposals be required? Should the Board provide a strict definition for equivalency, a consistent definition? Should there be limitations to how many CE proposals a state can submit? I'll pause there, Mr. Chair.

CHAIR BORDEN: Tom Fote, your hand is still up, and I've got John McMurray. Tom first and then John.

MR. FOTE: People forget that one of the reasons we started using CE was because it was disproportionately affecting different states in different ways with rules and regulations. We used summer flounder as a perfect example. When we implemented the summer flounder plan originally, the southern states were taking all kinds of restriction and all kinds of reduction.

States like New Jersey, New York, Massachusetts, Connecticut and Rhode Island were really doing nothing, because we were riding on the backs of the conservation of the southern states. I've always objected to it over the years. On striped bass when we looked at what the reduction was, some states were only taking a small reduction, and they were riding on the backs of other states that were taking a drastic reduction in the fisheries in their states.

Conservation equivalency was basically to allow a state to take the reduction that other states

were supposed to take and didn't take. I mean if we just put in and said every state has to reduce their catch by 18 percent of the catch to do this. That would be uniform regulations, but that is not what the Board does.

The Board puts a coastwide regulation in that basically effects each state differently, and some states take 25 or 40 or 50 percent reduction, while other states take a minute reduction. Now that is not fair and equitable either, and that's why conservation equivalency was put in, to basically ride over those points. I'll leave it at that.

CHAIR BORDEN: Tom, this is just a question to you. Are you satisfied with this list of questions?

MR. FOTE: I think we need to put a history of why conservation equivalency was put in there in the first place, to basically address these kinds of problems. When we look at one state and it's taking a 50 percent reduction, the state next to them, because of different regulations, because of the impacts on their fishery is only taking a 10 percent.

Now that's not fair, and that's not how we should regulate. We're all going to take 18 percent reduction, then that is fine, everybody takes an 18 percent reduction. Not one state taking a 25 percent, some states taking 3 percent. That needs to be addressed in here, and put out as one of the reasons why we use conservation equivalency.

CHAIR BORDEN: I've got John McMurray and then Ritchie White.

MR. APPELMAN: I wonder if I could just jump in really quick, Mr. Chair. I just wanted to respond briefly to Tom. There is a good amount of background information in the PID about conservation equivalency, which I did not spend much time on in these slides. But if there is anything you would like to add to that section, you know feel free to shoot me an e-mail, and we can work in some extra wording to address your concerns in the background.

MR. FOTE: I will do that, thank you.

CHAIR BORDEN: Okay next I've got John McMurray and then Ritchie White.

MR. McMURRAY: There is nothing in this section about the question of accountability for states who use conservation equivalency and have subsequently large overages. This is an issue that has been talked about a lot. It is clearly a concern of the public. There is a perception that conservation equivalency is used to game the system, and develop regulations that look good on paper but don't actually do much to achieve goals of the management action.

There was a motion to this affect back in August, although it was specific to Amendment 6. I would like to see a question about an accountability requirement added to the document before it goes to the public, because it is something the public is concerned about.

CHAIR BORDEN: Comment on that suggestion from anybody?

MR. APPELMAN: As I've started explaining every single section here, it is really hard for us to separate out these issues, and we tried the best we could. Of course, there is unavoidable overlap, and I think the point of accountability is one of those that we as a PDT sort of reserved for the recreational accountability section.

I understand the comment coming from Mr. McMurray that if a separate accountability question for conservation equivalency, and I think we tried to highlight the difficulties of evaluating conservation equivalency programs after they've been implemented. For recreational programs, because of that variable, because of how variable catch can be from year to year, and isolating the effects of the program on that catch.

It's very difficult. We didn't pose the question about accountability, but I think we highlighted clearly of why reviewing the effectiveness of these programs is such a challenge. I don't know if that is sufficient for you, John, or if you want to add a separate question in here.

MR. McMURRAY: It should be articulated, the difficulty of year-by-year data. But for scoping, I think that question needs to be in there. If you don't put it in there, people are going to comment on it in any case. I think it would benefit in particular by getting in front of it and putting it out there. That is my opinion, I would like to hear what some of the other Board members think.

CHAIR BORDEN: Let me just suggest this on the issue that John raises. I think Max offered to let John kind of frame a question. But then there is a separate issue of whether or not you include it in the recreational accountability section, or whether you would have it just on a section on accountability. Until we know what the actual question is, I don't think we can figure out where it goes. My suggestion for the Board is let John submit his question, and let the staff compile that as they are going to do all the perfections with this document, and then circulate it so everybody has this full transparency on the issue. Then if we don't get objections, then we'll figure out where it goes appropriately in the document. Does anybody object to doing that? I've got two hands up, but they have been up for quite a while.

I've got Ritchie White and Joe Cimino. I don't know do you guys want to comment on this issue? If not, I'll come back to you once we dispense with John McMurray's suggestion. Let me just open it. If Joe Cimino or Ritchie White want to comment on this suggestion, either one of you can go ahead.

MR. WHITE: Yes, I would support John's question, so I would support adding that in. Then I also have another issue that you can come back to me on.

CHAIR BORDEN: Okay thanks, Ritchie. Joe, do you want to comment on John McMurray's suggestion?

MR. CIMINO: I do, Mr. Chair, thank you. You know what bothered me about it at the time, and still bothers me now, at the time when a Board motion was made on this, is that you have a stock that seems to be in trouble. There is no consideration for evaluating the coastwide measure, it seems more punitive against states that did CE. You know why wouldn't we be looking at all the measures put in place for how they perform?

MS. KERNS: David, I don't know if you're talking, but you are muted.

CHAIR BORDEN: Oh, sorry about that. I have an index finger that has its own mind. I don't have a response for Joe. But does someone on the staff want to offer a response?

MR. APPELMAN: Yes, I would just offer that, you know I think crafting a question about how to hold states accountable for CE programs, or how a CE program should be evaluated perhaps is a good question. We're just focusing on the intent of this document. It's trying to solicit feedback from the public, or try to focus feedback from the public on the issues, and just keeping that in mind as we talk through these.

CHAIR BORDEN: Why don't you just go back to what I suggested before, and we basically allow John, John spurred this discussion. You had a couple of positive comments. Let John work with the others that have commented positively on it, frame up the question, whether it's a narrow question or a broad question, and send it to the staff. Then I would like the staff to circulate it to the Commission, so we all get to comment on it. Any objections to doing that? I want to go back to Ritchie White, who has another point to make on this issue.

MR. WHITE: I would like to add an additional question in, and I'm adding this because I believe we're going to hear a lot of public input to do away with conservation equivalency. I think there is a need for it, but I think it needs

to be reigned in substantially. The question I would add, and I had trouble with the wording, and I'll explain what I'm trying to accomplish, because I'm not sure. I had Megan Ware help me, because I just couldn't come up with the right terminology. But it would be, should the Board limit conservation equivalency to unique ecological areas. What I'm trying to accomplish is what conservation equivalency was years ago, which is more substantially in recent years, was an example of when striped bass started to recover, Maine had a lot of small fish, but they didn't have large fish. They did a conservation equivalency to do a slot limit of smaller fish.

They took a season to accommodate that. Another conservation equivalency I remember was Maryland, anglers not having access to large fish, so they asked for a short season on the spawning grounds of larger fish, and it was limited to an exact number of fish, so when they had tags and when those fish were caught the season was shut down.

I think those are what historically conservation equivalency has been, and it's only in recent times that states are looking to on the coastal regulations, is to find a way for their anglers to harvest more fish. In the past early on, we would have a coastal regulation, and it would be for all states.

All states would have the same coastal regulation, and that is how we managed striped bass. We didn't manage striped bass on an individual state, on what their mortality rate that that individual state was creating. I would like to have that question added if possible, because I think the public might accept that as opposed to eliminating all conservation equivalencies, which I believe we're going to hear in a strong voice.

CHAIR BORDEN: Ritchie, are you offering to work with the staff to kind of frame that question and then circulate it to the Board?

MR. WHITE: Yes, absolutely, because there may be better wordage that describes what I'm trying to accomplish.

CHAIR BORDEN: All right, does anybody object to that? Seeing no objections, I've got a couple of additional hands up on this point. I've got Adam Nowalsky and Chris Batsavage.

MR. NOWALSKY: I know there is going to be a lot of conversation from the public about this. In the vein of the last few speakers and the question that John is going to look to put together, Joe's comments, concerns about the question, staff doing the work. In going through this section, I get the sense from reading this section.

I think we know that we're asking about conservation equivalency, because there are concerns that conservation equivalency has a negative impact on the stock. But Joe brought up the point that in some instances the coastwide measure that was implemented in individual states, actually performed worse than the CE.

If John is going to develop a question, staff is going to take a look at it. One of the things I'll be looking for, so I'll ask in advance, for John to give consideration to it as well as staff, to think about how they would address it, and/or by adding a couple of sentences to this document that explicitly highlight that CE regulations do not necessarily mean that they perform worse, and in some cases states have performed worse relative to a reduction or a liberalization that was allowed, or reduction required, than CE regulations did in other states. That would be my request. I don't see that in this right now. If we added nothing else, I would ask for some addition to this that does identify that CE proposals don't always perform worse, and if that is implemented in conjunction with John's additional question, then I'm fine with that also.

CHAIR BORDEN: Adam, do you want to work with the staff on that language?

MR. NOWALSKY: I think I'll be happy to do so. Would your preference be that I wait to see

John's question first, and give him and staff a chance to add something, or do you prefer me to work independently, submit something, and allow staff to find a way to consolidate before sending it around to the Board for consideration?

CHAIR BORDEN: I think so we don't duplicate time, I suggest you let John and staff work on their portion on it, and then if you're not satisfied you can take a shot at it. Is that all right?

MR. NOWALSKY: That would be more than reasonable, and I appreciate that opportunity, thank you very much.

CHAIR BORDEN: I've got Chris Batsavage.

MR. BATSAVAGE: Yes, the last comments by the Board members are all good. When it comes to conservation equivalencies, it takes on a lot of different forms, you know with striped bass and other species. You know just kind of thinking about this as a whole, based on all the comments I've heard.

It almost seems, like with the first question, and I'm not objecting to the other questions that have come in, but it almost seems like in the first question, you put should CE be part of the striped bass FMP, and if so, how? Thinking about how it has been done for summer flounder, where it's all or nothing.

You go with coastwide regulations, or you go with conservational equivalency, to make sure that you're meeting, at least calculating the required reduction for the entire stock, or if you go with conservational equivalency, you know with the data limitations listed in some of these other questions. Should there be some sort of, I guess management uncertainty buffer added to those proposals, where, you know if you need a 20 percent reduction you go 25.

I think we've done that on an ad hoc basis with conservation equivalency proposals with summer flounder in the past. Yet again, not sure how that fits into all of this, but just think about all the years

that myself and others have dealt with summer flounder conservation equivalency and what we're dealing with now. I'm wondering if that might be another way of getting input from the public.

CHAIR BORDEN: I've got Justin Davis, then I have no other hands beyond that. Justin.

DR. DAVIS: I apologize for dragging out this discussion, but I did not want to make two quick points. One was that while I agree with Adam's suggestion of adding that component to the discussion, about conservation equivalent regulations not always necessarily leading to an undermining of conservation goals. I fully appreciate that and think that is true. I do think there are other concerns with conservation equivalency beyond just that sort of perception, you know conservation equivalency can lead to greater difference in regulations between neighboring states, which creates enforcement challenges, and you know challenges for our anglers.

I think also states having different regulations undermine sort of public understanding and trust in how we're managing the stock. I think, while I definitely support Adam's suggestion, I would not support framing the argument as the only concern with conservation equivalency is that the regulations developed under conservation equivalency don't perform as well as the coastwide regulations.

I also just wanted to push back really quickly on the idea that was advanced earlier that the goal of conservation equivalency is to find a way for every state to take an equivalent percent of proportional reduction under a coastwide management scheme. I don't think that is the intent of conservation equivalency in this FMP.

The intent of conservation equivalency is to allow states to tailor their regulations to achieve a similar or the same level of reduction in harvest, but that doesn't necessarily mean

that every state then ends up taking the same percent reduction that is not a characteristic of the coastwide management scheme. I just wanted to throw those ideas out there, thank you.

CHAIR BORDEN: There have been a lot of different suggestions here. Obviously, it's going to take a little bit of time for the Board members to submit language and so forth. Now it will be circulated to the Board. My suggestion is anybody that wants to comment on this section that hasn't spoken.

If you want to submit some additional comments on it, try to keep them brief, to the point, and submit to the staff, and the staff will try to factor that into the points that have been made, or at least consider those points, see whether or not we can wordsmith it to address some of these concerns. Did I have any other hands up on this issue? If not, I'm going to move on. The next issue is 7. Max.

MR. APPELMAN: Issue 7 is recreational release mortality, which we discussed in the previous agenda item, so I'll try to be brief here. Again, being a lot of attention coming out of the 2018 benchmark, showing that the catch and release fishery does contribute a significant amount of mortality to total mortality.

That is essentially an artifact of this fishery being a predominant recreational, and actually 90 percent of the catch is released alive, so we know not all those fish survive. The assessment uses a 9 percent release mortality rate. The challenge here is that the current management program uses bag limits and size limits, which are an effective way to control harvest, the number of fish that are coming home.

But they are not designed to control the number of fish that are caught and released, and susceptible to, you know release mortality. I will note that some states do use closed seasons, closed areas. Ritchie brought this up. You know those time area closures are designed to reduce effort, or protect striped bass when they are most vulnerable or susceptible to mortality from the fishing interaction. But those time area closures are not explicitly set by

the FMP. Those are done on a state by state basis. As we discussed, you know there are a number of ways the Board could try to address or reduce release mortality in the fishery.

Additional gear restrictions similar to the circle hooks, including awareness of the concern. Angler education, these types of efforts are targeting, you know reducing the rate at which fish die after being released, or to focus on effort controls, season closures, area closures to reduce the number of striped bass trips that are interacting with striped bass, so reducing the number of fish that are released.

Of course, there is a value in the catch and release fishery. We've been talking about it a lot. There is not much quantitative data out there, which the AP was very focused on trying to come up with some economics on the catch and release component. You know there is some data out there on the recreational component as a whole. But the value of the catch and release sector, if you will, there is not much quantitative information out there on the perceived value there.

But you know, with that aside, talking about mortality to the stock, it doesn't really matter what that source of fishing mortality is, whether it's harvest or release mortality. As long as overall mortality is sustainable. It really comes down to what is the acceptable level of release mortality for this stock, which is ultimately a management decision, and should reflect the objectives of the fishery. How important are high catch rates?

How important is this harvest in this fishery? Does the size of fish, for example, matter, things of that nature, which brings us into some of the public comment questions regarding release mortality? Should management focus on measures to reduce the rate at which fish die after being released alive? Should management focus on reducing effort in the fishery, trying to reduce the number of striped

bass that are caught and released? What are some ways to improve awareness and stewardship of the resource? That is Issue 7.

CHAIR BORDEN: All right, questions. I've got Ritchie White. Ritchie.

MR. WHITE: What management measures could we implement to reduce the rate fish die after being released? I don't know what management measures we could do. Secondly, the question about should management focus on reducing effort in the fishery, in order to reduce total numbers of striped bass caught and released. Added to that should be seasonal closures. That is the only way you're going to reduce, is to stop people from fishing. The people should know when they are answering that question what the only option is to achieve that.

CHAIR BORDEN: Ritchie, are you suggesting in the second point that we simply put, add a few words to the end of that, for instance, implement seasonal closure? Is that all you are recommending?

MR WHITE: Yes. I don't see any other. Unless there is something else that I'm missing, I don't think there is anything else that is going to reduce that.

CHAIR BORDEN: Okay, Max on the first point then.

MR. APPELMAN: Yes, I picked up on what Ritchie was offering, and we can add in that caveat, that clause to that second sentence. I just wanted to respond to that first part of your question, Ritchie. You know the first question here reducing the rate at which fish die. In essence that is what the circle hook provision is trying to do.

It's trying to increase the survival of a fish once you release it, avoiding the gut hook, being hooked in the mouth. That increases the chance of survival, so that is targeting that 9 percent release mortality rate that we used, trying to lower that number. Similar actions to that, other gear restrictions, improving awareness, promoting good fish handling

techniques. Those are all actions that can increase the survival of a fish once you release it.

CHAIR BORDEN: Ritchie, have you got a follow up?

MR. WHITE: Well, I guess we're asking a question, but we've already implemented circle hooks. I guess I'm not sure what other measures we can take, other than education, and the last question does that. I'm just not sure what there is in that first question that we could get anything from the public that would be helpful.

MR. APPELMAN: I guess I'll ask, are you suggesting we remove that question? Folks could provide other examples, banning treble hooks or something along those lines. I know there are other examples of similar actions that could be offered. But if you don't find utility in this question, we can remove it.

MR. WHITE: Yes, I guess we could ask are there any other measures that the public can see that would do this. We're saying it like, should we focus on measures that we know about, the way I read that.

CHAIR BORDEN: Max, this is a fairly simple change, you're just going to reframe the question, Max?

MR. APPELMAN: Yes, sounds good.

CHAIR BORDEN: I've got three or four hands up. I'm going to take them just in order. Adam, you can go next, and then I've got Cheri.

MR. NOWALSKY: I agree with the bullet that has come up here on the screen on the previous slide, as well as the statement that is in the section that it doesn't matter what the source of mortality is relative to the health of the stock. But where the source of the mortality is

very important, is what it does in terms of redefining access to the fishery.

When we're taking a fishery, and turning it into almost an exclusively release fishery, that provides entrance for a number of people that may not pursue the fishery, because they are interested in being able to take some fish home. I'm wondering if this is the right place to be asking the question, specifically about what are the impacts of increased release mortality through discards on the shape of the fishery, in terms of participation, would be how I would phrase that question, or if staff and the Board thinks there is a better way or better place to encompass that question, about what release mortality is doing in shaping the fishery and affecting participation.

CHAIR BORDEN: Any comments?

MR. APPELMAN: I was more focused on writing down what you were saying, Adam, then I was in absorbing what you were saying. You were looking at adding a question here about how release mortality affects other participation in this fishery?

MR. NOWALSKY: Correct, and how it affects what the fishery looks like. My concern is that as written, the focus of this section is going to be on the bullet point on the slide, and on the sentence in this statement in this section that the source of mortality doesn't matter to the health of the resource. The takeaway from that could be, if people don't read into it deeper, is that the source of mortality doesn't matter in the fishery.

That statement, again the statement of the source of mortality doesn't matter to the health of the resource is 100 percent true. The statement that the source of mortality doesn't matter to the fishery is not a true statement. I don't want that one statement that is in here about contributing to the health of the resource.

I don't want to lose sight of the fact that the release mortality shapes the fishery with regards to participation, discourages participation from certain

groups if they don't have access to harvest a fish, or multiple fish, whatever they're looking to pursue. I think that is important, and again that sentence just jumped out at me as needing to reinforce the fact that the discards, the source of mortality doesn't matter to the resource, but it matters a whole bunch to the fishery.

MR. APPELMAN: I would just offer, so of course the way it is written in the document is very different than how I tried to summarize it in a few bullets on a slide. Adam, I would offer, read the section in the document and if that statement, that bullet in your opinion, has too much weight in the document. Let us know, and offer some suggested edits there, or offer a question that we can add to the public comment questions. I personally don't think that that statement is taking up or consuming the dialogue in this section.

MR. NOWALSKY: No, and if I may respond once more, Mr. Chairman.

CHAIR BORDEN: Yes.

MR. NOWALSKY: The specific suggestion, I agree with you that it is not dominating this presentation, nor is it dominating the document. I agree with that perception. My specific recommendation would be in the statement of the problem, where you have the sentence, "the source of mortality does not matter to the health of the stock."

I would add a follow-up sentence about the source of mortality may shape the fishery, in terms of participation, something along those lines. I would add as another sentence there. Then I would add as another public comment question, with regards to what impact on how the fishery looks does management focusing on a primarily release fishery have on the shape of the fishery. That would be my specific way to address the document for my concern. That

would be my request, if there is no objection from the other Board members. Thank you.

CHAIR BORDEN: My suggestion is, you've heard Max's suggestion. Adam is willing to frame the issue, I think with the staff. Is there any objection to those two working together to try to address his concern? Then we'll circulate for other language they agree to. There are no hands up. Okay, so Adam, you've got another task to work on.

MR. NOWALSKY: I am gracious, thank you very much.

CHAIR BORDEN: Next person on the list, Roy Miller.

MR. MILLER: In regard to Ritchie's comment under that first bullet that appears before us, that circle hooks are really the only way that we focused on to reduce the rate at which fish die after being released alive. There are other ways, some of which would be very innovative. For instance, Florida has a regulation with tarpon that if you pull a tarpon out of the water and pose for a picture with it, it counts as a killed fish, a dead fish.

Something similar for large striped bass would be very protective. People would make a huge effort to not bring the fish out of the water, but release it alive over the side of the boat. Rubber nets, banning gaffs, all those things are measures that could be employed to reduce the rate at which fish die. I would like to hear what the public might contribute, so I would leave this particular bullet point in. I think the public can suggest some innovative things to us.

CHAIR BORDEN: I've got Cheri and then Tom Fote, and Cheri I apologize, I should have taken you first before Roy.

MS. CHERI PATTERSON: No problem. Thank you, Mr. Chair. I agree with Roy. I think that there are several measures that can be included in reducing effort in the fishery other than the circle hook scenario, and I could think of things that happened in other countries also. Maybe it would behoove us

to, when this goes out in the PID, to indicate what is being conducted now in reducing effort, and ask for additional suggestions other than what is currently being done to reduce effort.

CHAIR BORDEN: Tom Fote.

MR. FOTE: Yes, a couple of points. We're not sure whether it is easier and more survivable on a small fish when you release it or on the big fish. Some of them assume because of the size of the fish, how it fights harder and it takes longer to get through, and builds up maybe more lactic acid. Maybe that is a greater risk fishing on big fish.

If you want to basically protect the fish you shouldn't be fishing on big fish, maybe only small fish. I can't make that statement until I know the facts of who has a better chance of surviving hook and release fishing when you do that. Those are the questions we really need. When I went out to the public, I wanted to know, you know we've all been on the fleets and watch when it's lined up and a full blitz is going on in striped bass, and guys dragging fish in, and seeing how fast they can release them or kick them in, to get another fish on the line. That's where it is an education process, because it's not the number of fish. It used to be the number of fish you put on the dock, and now it's the number of fish you can say you caught and released on Facebook.

It all has its consequences. You want to go out and catch 100 fish in a day, or 50 fish when the schools hit. Maybe you should stop fishing after you catch 15 and release. There was a conversation I had many years ago with one of our David Hart winners, who basically said he was upset with the charterboat fleet for being allowed to catch two fish in New York. I said well, he killed so many fish in a year, maybe this one guy going fishing.

I said maybe you should stop fishing for striped bass, after you killed the same amount of fish,

because you're fishing every day and you're catch and releasing, and you have the same consequences on your overall stock as he does. Those are the things we should be talking about in catch and release, that it does contribute, and it also effects the way we fish for it.

We've are allowed 2-fish at 28 inches for years. With the greater increase in the hook and release mortality and everything else, we've basically affected how people take fish home to eat, or basically fish for that, fish for their table. As Adam was basically pointing out, we're trying to turn this into a completely catch and release fishery.

I'm not 100 percent that's the way I want to go. I mean our people should be able to use the public resource, is it more healthy for us to basically throw them back and them die, or we could basically take them home to eat? There should be compromise in the middle. That is how we have to deal with it.

CHAIR BORDEN: We've had a lot of discussion on this issue. Is there anyone that wants to raise an aspect that has not been covered by somebody else? There are no hands up, so Max, if you will move on to the next issue.

MR. APPELMAN: Moving on to recreational accountability. Again, this has come up a little bit already, tied to concerns and challenges with release mortality, which we just talked about. Certainly, the conservation equivalency. There has been a lot of conversation, I think lately, on the equality between the recreational and commercial sectors.

The relative proportion of mortality coming from the commercial sector perhaps might not be in line with the type of restrictions that are in place. As far as the recreational side, you know the primary challenge here is that it's not managed by a quota system like the commercial fishery. There is no recreational harvest limit like we see with some of the federally managed species.

There is a potential for harvest and catch to fluctuate considerably from year to year, which makes it difficult to evaluate if removals from the recreational sector are too high, and by how much. Again, a lot of variability in the catch, due to factors that are largely out of our control. Changes in angler behavior, year class strength, the availability of fish and distribution of fish up and down the coast in a given year has big impacts on harvest and catch and release. Some other concerns are that that annual variability under recreational quota leads to changes in regulations each year, which is another concern that has been raised, particularly in conflict if one of the stated objectives of regulatory consistency in this fishery. Which leads into some of the public comment questions. Should the Board consider implementing an RHL or quota for the recreational fishery.

How should overages or underages be addressed? Should stock status be considered when addressing overages and underages? Are there other measures the Board should consider for managing the recreational striped bass fishery, other than the current tools in the toolbox? That is it for recreational accountability.

CHAIR BORDEN: You've heard Max on the subject. Tom Fote, your hand is up. Do you want to speak on that or is that a remnant from the last time?

MR. FOTE: I accidentally left it open, but while we're looking at this. I think one of the things we should discuss in this is the fact that, you know we just went through a major MRIP, MRFSS basically changeover, and the consequence of that was dramatic. We're not even sure how valid those numbers are. We seem to think they're valid, but it was just a complete difference.

Every time we do that, you know we always say that it's going to be your state's turn next on

when it comes to summer flounder, because no matter what you did, you followed all the rules and regulations. One year you're 25 percent under, and the next year you're 25 percent over. There are so many viability factors in there. It has nothing to do with fishermen and fishing pressure, but just what happens with your numbers. I always worry about accountability, and how we basically have that put into place.

CHAIR BORDEN: I've got Megan Ware and then Mike Luisi.

MS. WARE: I first just wanted to take a second to kind of complement the PDT on the PID. I know we're providing a lot of suggestions now. But I do think that the PDT did a pretty good job of trying to balance a lot of different perspectives, and some pretty controversial topics in a short document. I wanted to give you guys some kudos for that.

For recreational accountability, I think one of the major questions, if the Board chooses to pursue this is, kind of what scale that accountability is, whether it is at the state level, a regional level, or a coastwide level. Particularly, how that jives with greater uncertainty in MRIP data at the smaller scale. It seems kind of just reading through this that the focus is mostly on an RHL, so I don't know if that was intentional by the PDT to focus on more of a coastwide accountability approach. I guess that would be a question for you, Max, if that was intentional.

But either way, I think it might just be helpful to clarify that the RHL is a coastwide accountability measure, and that we all kind of rise and fall into one. I think some members of the public may not be as familiar with the federal system, particularly up here where we're not dealing with black sea bass or summer flounder or some of these other species that have RHLs. Just adding even a few words that this is a coastwide accountability measure that is given as an example, I think would be helpful.

CHAIR BORDEN: Max, you've heard the suggestion. Is that a problem?

MR. APPELMAN: No. Not a problem. I think we can fold that in. I think our focus of really trying to isolate the underlying concerns and challenges with recreational accountability is showing some examples of how it is done in some other FMPs is just sort of an artifact of that narrow scope we were trying to have with these issues, Megan. But point taken. I think there is definitely a few places in the background, and perhaps a question we can pose about implementing accountability on a regional or coastwide level.

CHAIR BORDEN: Mike Luisi.

MR. LUISI: I'll certainly agree with Megan's points regarding scale. I guess to her point, the focus on the RHL and maybe that being a way forward with striped bass. I would just caution. Well, maybe I won't caution moving forward with that as something to consider. But I think what needs to be addressed in this document are some of the challenges that we have faced with the federal program through our black sea bass and the flounder, scup, and bluefish fishery management plans.

We have faced incredible challenges using the RHL, and having an annual payback provision on recreational fisheries. It has created such chaos in some ways that members of this Commission and the Mid-Atlantic Council have worked over the past two years to develop a document that we refer to as the Recreational Reform Initiative, which takes a different approach at managing recreational fisheries. It's more than just accountability.

Accountability is part of it, but you know we are at the point at the federal level where we are trying to find a way out of the box. Then here we are talking about taking a system like the striped bass fishery, and throwing it right back in that box with this RHL concept. I think the language is there in this Recreational Reform Initiative document that expresses the problem statement, and the work that's been done to try

to put together an approach that may be different from this RHL concept.

I think it would be good for this document to express some concerns, at least identify some of the areas of concern, or some of the ways that under the federal system fisheries have been constrained during times of increased biomass, due to the lack of the ability of a state to constrain harvest. I just wanted to make that point, and address that recreational reform initiative topic. Thanks, Mr. Chairman.

CHAIR BORDEN: I see no other hands up.

MR. APPELMAN: May I jump in really quick, Mr. Chair.

CHAIR BORDEN: Max.

MR. APPELMAN: Yes Mike, thanks for that. I just wanted to maybe offer. I think some of the text in the PID does highlight the pitfalls that you've been talking about with the RHL. But if you have any specific language to perhaps beef up those concerns. Please shoot me an e-mail and we can fold that in.

MR. LUISI: Okay. Will do.

CHAIR BORDEN: Any other items under this issue? There are no hands up, so let's take up the last issue, and I as I announced at the start of the meeting. When we get after the presentation, I'm going to recognize Delaware, whoever wants to speak on behalf of Delaware, and let them raise one of the concerns that they've raised. Max.

MR. APPELMAN: Coastal Commercial Allocation is Issue 9. Again, focusing on the primary concerns and challenges that have been brought up. The first is that the basis for the current allocation scheme is from landings, harvest data from 1972 to 1979. There has been concerns raised that is not new to the Board that data from that time period may be outdated. There was a number of data quality issues. Harvester reporting was not required.

There were sales of fish across state lines at that time that may be adding to these inaccuracies in data.

Perhaps there is a better timeframe to use for quota allocations into the future. One of the other concerns is that state-by-state quotas for this program are fixed in pounds, and are only changed really through adaptive management, in response to overfishing or overfished determinations, which is different from other species, where we set the quota you know every year or every few years, in response to changes in biomass or updated information on biomass.

The states are allocated a percentage of that changing quota. Those are the primary concerns that are highlighted in the PID, and the questions to the public are, is this 1970s landings period still an appropriate baseline for the coastal commercial allocation? Should other allocation approaches be considered?

Should the coastwide quota be explicitly set on an annual basis, or following updated stock assessment or benchmark? As a precursor to, I'll dive in a little bit for a second on some of the background information here. The earlier versions of Amendment 6 did allow certain areas to operate under a different F rate, Chesapeake Bay and the Albemarle Roanoke system in North Carolina.

Now as an artifact of that they were able to implement a different harvest strategy at our harvest control rule for the commercial quota, so those earlier years under Amendment 6, Chesapeake Bay in particular was able to change its quota from year to year, and their FMP moved away from that with the implementation of Addendum IV in 2015. Some questions about whether we should revert back to a similar process for the Bay, or for the coastwide allocations. That is it for me, Mr. Chair.

CHAIR BORDEN: Would a representative of the Delaware delegation want to speak to the concerns that they have on this issue? John or someone else?

MR. CLARK: Yes, I will do that. First, thank you Max and the PDT for an excellent document. We just had a couple of concerns. Instead of reading, I can read through and one of the changes we made was just to the actual text in the background. We did want to add in the fact that Delaware's quota under Amendment 5 was based on Delaware having producer area status, so it's only in the background that we bring up the term producer area status, and we just in an extra sentence describe. Well, I'll tell you what. I can read you what's in the original, and just tell you what the difference is.

The BIB right now says, "Of note, Delaware's quota was held at its 2002 level under Amendment 6, due to evidence that F was too high in Delaware Bay at the time." We would like that changed to Addendum III to Amendment 5, also grant the producer area status to the Delaware River and Bay, which allowed its commercial quota to be managed under a harvest control rule similar to that used in the Chesapeake Bay.

Of Amendment 6, the quotas were increased to 100 percent of the base period, with some exceptions, and producer area status was rescinded. Of note, Delaware's quota was held at its last producer area level under Amendment 6. The change, it's small, but it just gives a little more of the nuance of what actually happened back then.

Delaware did not get a windfall going into Amendment 6. We had been managed differently. Then the only other thing I would like to bring up. I know everybody has had enough of this, and as Napoleon would say, I'll be short. We wanted to add in the public comment questions, should regions with the necessary data, such as the Chesapeake Bay and Delaware Bay systems be able to transition back to a harvest control rule, where commercial quotas are set annually based on supportable biomass?

That is the extent of the changes we would like to make, and then we just added a little more explanation about the fact that striped bass right now is using the oldest data of any other species under ASMFC management for managing its commercial quota. That was pretty much it, Mr. Chair, thank you.

CHAIR BORDEN: My understanding, John, correct me if this is not appropriate, is that you've already submitted written comments, which I don't think has been distributed to the Board, so the staff is going to review those and then I'm sure there will be some back and forth between you and staff about what actually gets included in this document. This is kind of a work in progress, and you and the staff are working on this in a similar vein to the other individuals who basically agreed. Is that an accurate understanding?

MR. CLARK: Exactly, Mr. Chair, I think we're just a little further ahead. I submitted a rough draft to Bob, Pat Keliher, and Megan Ware, and Megan, she did a great job of revising my revisions and suggestions, and that document is now with Max and Toni, and with ASMFC. Yes, so they will get back to me with any questions, problems with it. Thanks.

CHAIR BORDEN: What my suggestion is, we just let that process continue to play out. Then once the staff is kind of comfortable with this language, they'll circulate the language in a manner similar to all the other issues that come up. Does anyone object to that? Emerson, I've got your hand up, but are you objecting to that? Oh, it just went down.

MR. EMERSON C. HASBROUCK: No, I'm not objecting, but I had my hand up because I wanted to comment on Issue 9.

CHAIR BORDEN: Okay, so I'll come right back to you. Any objection to handling the Delaware concern the way we are? If not, it looks like John Clark has a work in progress. Emerson.

MR. HASBROUCK: At our last Board meeting I voiced my concern about keeping this issue within this Amendment. I think it's just going to slow us down. It's going to keep us from the timeline of all the other issues in this Amendment. I'm drawing on our recent experience with summer flounder.

It took us five years to resolve that. I'm concerned about even keeping this in this document. Now, I know I made a motion that was seconded at our last Board meeting, but it failed for lack of majority. But I would like to see added in here a question. Does the Board even need to address quota allocation at this time?

The questions that are there for the public comment are very leading, and assume that we will change the allocation method. I would like to see that added in there. I've been hearing from the public that you know, going down this road is just going to slow down, well slow down, delay and side rail all the other issues that we really need to deal with in this Amendment.

CHAIR BORDEN: Emerson, you're just suggesting the addition of one question. Does anyone object to having Emerson work on that question with Max, and try to flesh that out, and then circulate it? No hands up. Okay, so Max, what else have you got?

MR. APPELMAN: Just one more slide, and that is to, you know in the spirit of the PID, which asks the overarching question, "How would you like management of the Atlantic striped bass fishery to look in the future?" There is this other issue section, an opportunity for stakeholders to raise any other issues that might not be covered by the nine that we already went through.

Advisory Panel members teed up this list a little bit. They gave some examples of other issues, impacts due to climate change, impacts from habitat, from habitat degradation, resources or sufficient resources for law enforcement, perhaps some research priorities we should be focusing on.

The important part of this section is that we ask stakeholders to, if they are going to raise other issues that they provide some suggestions or comment on actions managers can take to address the concerns that they bring up under this section. With that, that is the last slide I had for the PID.

CHAIR BORDEN: Comments? There are no hands up. Let's see, Maureen.

MS. MAUREEN DAVIDSON: Since we've come to the end of the document, I wanted to add something that is not necessarily a question with public, but in light of the fact that we are now managing menhaden using our ERPs, which are also related to the biomass of striped bass. Is there any place in this document where we can add that we are now moving towards ecosystem-based management, and the role that menhaden has on striped bass? I'm not necessarily saying that it should be, it's not one of the things that we're trying to change, but I believe this is the first amendment since we did make that change last year, I mean obviously.

Is there just somewhere in the document where we could show the public that yes, we are moving toward EBM, our first step was with menhaden, because we know how important it is to striped bass, and we even use striped bass biomass to sort of define some of the reference points for menhaden.

This is just to show that yes, we are moving towards this. This is the first step that we've taken, and how it relates, and how important striped bass is. Even yesterday in our discussion about the striped bass, we talked about the fact that the stock is so low. It really is not going to affect menhaden biomass, in terms of predation.

We do keep tying them together, and I think this is an opportunity for the Commission to show the public yes, this is the direction we're moving in as we deal with these other issues for

striped bass. I know this document is very single-species oriented, but I think it is important at this time that we say look at the direction we are going to go in. Thank you.

CHAIR BORDEN: Any comments on that? There are no hands up that I can see.

MR. APPELMAN: If I could just offer a quick response, Dave. I'll say that the Development Team definitely talked about that concept, for sure. I think we ended up compromising on adding some language in the background, so at the end of the document there is some background information on the management of the stocks and additional information, if you didn't get enough in the initial 9 issues, there is a little bit more for the readers.

I hope I'm not mistaken, but I think there is a little context in there about ERPs. If not, I would offer that that might be a good place to introduce everything you were saying about ERPs and the relationship with striped bass and menhaden management. Take a look at those background sections at the end of the document. If there is some text you would like to offer, feel free to pass that on.

MS. DAVIDSON: Okay, thank you, Max.

CHAIR BORDEN: Maureen, are you willing to do that?

MS. DAVIDSON: Absolutely.

CHAIR BORDEN: Okay, so we'll just add that to the list. Are there any other comments on this section? Jason McNamee.

DR. McNAMEE: I'll be really quick. I just wanted to support, I really liked everything that Maureen just said, and it sounds like you have a good plan there. I was just going to offer, at the very least maybe it could be one of the items put into this "other issues," just to offer a chance to the public to kind of let us know what they're interested in seeing on that with regard to striped bass. Just to offer an

alternative, but I really like the exchange that Maureen and Max just had as well.

MR. APPELMAN: I'm sure you're speaking, Dave, but we can't hear you.

CHAIR BORDEN: Okay, I'll repeat myself, sorry about that. We've had a number of suggestions from different individuals on changes that I kind of view as relatively quick fixes. A number of people, members of the Board have volunteered to work with the staff on offering the language that then can be circulated to the rest of the Board.

My suggestion is we allow those individuals a couple of weeks to work with the staff on perfecting the language, and then circulate the language to the Board, all the members of the Board. Just to change language, it doesn't require Board members to hunt through the document to find out what has been changed.

Then my suggestion is, once that process has been circulated, we'll no doubt get comments from other Board members. But once that process concludes, then there are a couple of ways of handling this. We can put off the formal approval of the PID until the next meeting, or we could for instance do a mail ballot, once everybody has the precise language.

Does anybody have any preferences on how we handle that? No hands up, so my suggestion as Chair is, we allow that process to play out, and hopefully that will all be concluded in the next two to four weeks. You'll have a final document, and then we do a mail ballot to approve it for hearings. Are there any objections?

MR. APPELMAN: I'm going to jump in here, and see if Bob shot his hand up in the air. Bob, I can defer to you or attack it.

EXECUTIVE DIRECTOR ROBERT E. BEAL: I can comment, Mr. Chairman, if you're comfortable with that.

CHAIR BORDEN: Okay, that's fine, Bob.

EXECUTIVE DIRECTOR BEAL: I guess from a staff perspective, you know if it does take two to four weeks to sort of get this document polished up, and then reviewed and approved by the Board. That puts us pretty late into November, and you know since this is an Amendment, we've got some public comment constraints.

The document has to be out 14 days before the first hearing, and 30 days public comment has to be opened after, or maybe it's even 30 days. Where I'm going is, if we wait or if it takes them about two to four weeks to wrap this up, we won't be able to get the public hearings in with holidays and other things, prior to the winter meeting.

We could start the hearings and they may straddle the winter meeting, but we just wouldn't have time to get this completed before the winter meeting. You know, I guess it's up to the Board on, would you prefer to handle the edits as best we can, as quick as we can now? But as you were saying, Mr. Chairman, wait until the February meeting. That gives people a little bit more time to be deliberate and not hurry through these changes, and come back in February, then we can have hearings, you know in the spring. Who knows what the spring is going to hold, as far as being able to meet in person or virtually? But getting this wrapped up and done before the February meeting is very unlikely, I guess is the best way to put it.

MS. KERNS: Bob, if I could just fill in a little. I would prefer to try to tackle these edits somewhat quickly, and not drag them out for four weeks, just so that it is still fresh in everybody's mind, and we can turn that around, regardless of when we decide to approve this document for public hearing. I don't want to drag out those edits for too long, being that I'll be the staff person filling in on this species. I

don't want to dump us into too many holidays or other Council meetings.

CHAIR BORDEN: Bob, thank you very much for that comment. I guess my own reaction to it. If we need to move the comment period, in other words the period of time that the Board members have to work with the staff to perfect the language pops, so it takes place in the next week. I think that is desirable. I would be a little bit concerned that if we wait until the February meeting, then that just starts the clock at that point.

Then, I would rather have a longer period of time to spread the public hearings out, because I think there are going to be lots of public hearings. If we accelerated the work at the schedule that I had forwarded. I think it would leave a longer period for states to have actual hearings on it, and then we could report with the idea that we would report the results at the spring meeting. That was my suggestion. I've got a couple of hands up, Ritchie White, do you want to talk?

MR. WHITE: Yes, I guess I would lean towards Bob's suggestion. When we started this process there was a lot of discussion about not rushing it. We take our time, get it right, these are big issues, this is important stuff. I don't feel the need to be rushing. I guess I would choose the February meeting to review this, and then send it out after that.

CHAIR BORDEN: Okay, I've got a couple of other people. I think in the interest of time, since we're way over, we just say kind of limit your comments to deal with it at the February meeting or not. That would be helpful. I've got Tom Fote and then Dennis Abbott.

MR. FOTE: I agree with Ritchie.

CHAIR BORDEN: Okay, thank you, Dennis Abbott.

MR. ABBOTT: Yes, thank you, Mr. Chairman. Again, I agree with Ritchie. Those are my thoughts. We need to do this deliberately, and with the timeline that was offered, if we miss any of the milestones it puts us into the next calendar year, so by the time we got an amendment approved we would be looking at the year following.

By delaying, not delaying, but it taking an extra meeting or so, we're looking at finishing this in 2022, and implementation in 2023. Again, we said we should be deliberate. This is probably one of the biggest undertakings that we've had in some years is coming up with a new striped bass amendment. I think we should go about things. As the last thing, while I've got the microphone. We're also losing Max here in another week, so that is going to bog this down, knowing that Max is heading out the door.

But what I would like to say is that I would like to thank Max, not for all the fine work that he's done, but for being a very pleasant, enjoyable, and intelligent person to work with for these past five and a half years, and we will all miss Max and wish him well in his new job. I'm sure you were going to say the same thing, David.

CHAIR BORDEN: Thanks, Dennis, I have Mike Luisi and then I'm going to just offer a suggestion. Mike.

MR. LUISI: Yes, I just wanted to add that I think, I don't see any harm in taking the edits from today, working them through the different Board members, giving people some time, and then reviewing this in February. You know we would have a much more clean version with comments from Board members at that time, and then we can put it out to the public for the spring.

Honestly, as much as I would like to stick by this timeline, I think given what Dennis just said with losing Max, and with other things that are going to come up during our discussions. I don't think the October 2021 is going to be something, I think we're going to be into 2022 when this finalizes, and I'm okay with that. I don't feel the need to rush, so

I'll go and say I would support the delay. Let's get this right. Let's make sure this document is ready, and ready for the streets when it hits the streets in the spring. Thank you.

CHAIR BORDEN: All right, so it sounds like we've got a consensus. I would like the individuals per Toni's request to formalize their suggestions and get those in to the staff within the next week, by next Friday of next week, and then the staff will work on the language and circulate it. Is there any other business under this issue? Max.

MS. KERNS: David, before you go to Max. Just to request that when folks send us their language, they could send us tracked changes. In order to get us tracked changes, if you need us to send you a Word version of the document, please just reach out and we'll do that. But I think that is the easiest way for us to incorporate your edits.

CHAIR BORDEN: All right, Max, have you got anything else under this issue? If not, we're going to move on. Did you get the issue of AP nomination? New York made a suggestion. Maureen, do you want to introduce your suggestion?

MS. DAVIDSON: Yes. What I would like to do is appoint someone to the Atlantic Striped Bass Advisory Panel from New York. I'm ready to make the motion. Are you guys ready for me to start talking? Hello.

MR. APPELMAN: We hear you. Give us one second to transfer control of the webinar back to Maya, and she'll pull up the motion you have prepared.

MS. DAVIDSON: Do you want me to read it?
Move to nominate to the Atlantic Striped Bass Advisory Panel Bob Danielson from New York.

CHAIR BORDEN: Do we have a second?

MS. KERNS: Tom Fote is seconding that.

CHAIR BORDEN: You heard the suggestion by Maureen. Are there any objections to this suggestion? **I see no hands up, and it's adopted by consent.** Thank you, Maureen.

MS. DAVIDSON: Okay, thank you.

OTHER BUSINESS

CHAIR BORDEN: I'm under Other Business. Is there any other business? I've got one item, and that simply is to thank Max for all his hard work on behalf of the Commission. He's been a wonderful guy to work with as the Board Chair. He's great, and he does things promptly.

I'm sorry to see him go off to NOAA, but I'll look forward to working with him in his new capacity, and I hope some of his new capacity involves the Commission. Thank you very much, Max.

ADJOURNMENT

CHAIR BORDEN: Any other business to come before the Commission? If not, I see no hands up, the meeting is adjourned.

(Whereupon the meeting adjourned at 5:52 p.m. on
October 21, 2020.)



Atlantic States Marine Fisheries Commission

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MEMORANDUM

January 11, 2021

TO: Atlantic Striped Bass Management Board
FROM: Atlantic Striped Bass Technical Committee
SUBJECT: Release Mortality Sensitivity Runs

At its 2020 Annual Meeting, the Atlantic Striped Bass Management Board (Board) tasked the Atlantic Striped Bass Technical Committee (TC) with conducting additional runs of the striped bass stock assessment model using different assumptions about the mortality rate on fish released alive by the recreational fishery, as a way to explore the sensitivity of the model to this assumption.

The stock assessment currently assumes that 9% of all striped bass released alive from the recreational fishery die as a result of being caught and released based on a study by Diodati and Richards (1996). The range of estimates from Diodati and Richards (1996) are consistent with estimates from other studies, which have found that factors like temperature, salinity, gear type, angler experience level, and others have an effect on the release mortality rate for striped bass. The TC discussed a range of scenarios to explore for this analysis, including using different release mortality rates for different seasons, regions, and years. The TC had previously developed catch-at-age matrices for the recreational release mortalities by year, region (Bay vs. Ocean), and season (January – February, March – June, and July – December) in order to parameterize the two-stock model. Applying different release mortality rates to these matrices would be straightforward and require minimal additional work, but applying different release mortality rates at a finer scale (such as by month or state) would require significant effort and time. The TC selected four alternative release mortality scenarios to take advantage of the existing catch-at-age matrices and provide reasonable bounds on the problem. Those scenarios are:

- **Base case:** 9% release mortality rate for all regions and seasons
- **Low release rate:** 3% for all regions and seasons (best case scenario rate in Diodati & Richards (1996))
- **High release:** 26% for all regions and seasons (worst case scenario rates in Diodati & Richards (1996))
- **Seasonal release mortality rates:** 5% for January – June, 12% for July – December for both regions (based on regression tree analysis from the 2013 benchmark and other studies)

M21-04

- **Regional release mortality rates:** 16% for the Chesapeake Bay, 9% for the ocean for all seasons (based on Lukacovic and Uphoff (2007) for the Bay and Diodati & Richards (1996) for the ocean)

For each scenario, the total catch and the catch-at-age were recalculated based on the new release mortality rate assumption, and the current stock assessment model was run with the new catch data. The SSB threshold (the 1995 estimate of female SSB) and the F threshold (the F that will maintain the population at the SSB threshold in the long-term) were recalculated for each scenario based on the results of that run. The TC compared estimates of SSB, F , recruitment, selectivity patterns, and stock status to determine how sensitive the model was to the release mortality rate assumption.

Results

Overall, changing the release mortality rate assumption changed the scale of the estimates of female spawning stock biomass (SSB), F , and recruitment but did not change the overall trend, or change stock status in 2017.

The low and high release mortality rate scenarios had the largest impact on total removals (Figure 1) and therefore on estimates of SSB (Figure 2), F (Figure 3), and recruitment (Figure 4). The lower release mortality rate resulted in lower estimates of SSB and recruitment and higher estimates of F , while the higher release mortality rate resulted in higher estimates of SSB and recruitment and lower estimates of F (Figures 2-4). The seasonal and regional estimates of release mortality, had a smaller effect on total removals (Figure 1), and therefore resulted in smaller changes in SSB, F , and recruitment. Estimates of SSB, F , and recruitment from the seasonal and regional scenarios were very similar to the base case (Figure 2-4).

The low and high release mortality scenarios also had an effect on selectivity estimates for the fishery. Because fish that are released alive tend to be smaller and younger than fish that are harvested, a higher recreational release mortality rate results in higher selectivity at age for younger fish, while a lower release mortality rate results in lower selectivity-at-age for younger fish (Figure 5). The selectivity patterns estimated for the seasonal and regional scenarios were very similar to the base case selectivity curve. These differences in selectivity were incorporated into the calculations for the F threshold, resulting in a lower F threshold for the high release mortality scenario, a higher F threshold for the low release mortality scenario, and F threshold estimates that were very similar to the base case for the seasonal and regional scenarios (Table 1).

Despite the differences in scale across the different scenario, the overall trends were very similar and stock status was the same in all scenarios, with striped bass being overfished and experiencing overfishing in 2017 (Figure 6, Table 1).

Discussion

Significant changes to the release mortality rate (i.e., going from 9% to 3% or 26%) resulted in significant changes to the scale of the population, but did not affect the final stock status determination. The higher release mortality rate did result in a stock trajectory where striped

bass became overfished earlier in the time series than the other scenarios, but the 2017 stock status was consistent across all scenarios. The seasonal and regional release mortality rates, which the TC felt were the more realistic scenarios, had minimal impacts on the estimates of SSB, F , and recruitment, and minimal impacts on stock status. Therefore, the TC concludes that the model is somewhat sensitive to major misspecification of release mortality rate, but less sensitive to smaller scale misspecifications. Refining the overall coastwide estimate to reflect regional and/or seasonal differences can be pursued for the next benchmark assessment; it would likely not result in significant changes to population estimates or stock status, but could produce minor improvements in the estimates.

The TC stressed that although refining the estimate of the release mortality rate is not expected to have a significant effect on stock status from the assessment model, it does not mean that release mortality is not significant itself. Reducing release mortality through management measures and angler education and outreach – either by reducing the total number of fish caught and released, or by reducing the percent of fish that die as a result of being caught and released through better angling practices – is still important for the recovery of the stock.

The TC noted the limitations of this analysis. First, the different release mortality rates were assumed constant over time. If release mortality rates have been changing over time – for example, increasing due to warming water temperatures, or decreasing due to increased circle hook use or changes in angler behavior – then the impact on population trends and stock status in recent years may be more significant. The TC discussed developing a scenario with a trend in the release mortality rate, but the work to develop a realistic trend tied to temperature or other factors was beyond the scope of this task. Similarly, the release mortality rates explored are the same for all size/age classes of striped bass. There is some limited evidence that release mortality rates may vary by size, but not enough to parameterize a reasonable alternative scenario for this task. These are scenarios that can be explored in more depth for the next benchmark.

Literature Cited

- Diodati, P.J. and R.A. Richards. 1996. Mortality of Striped Bass Hooked and Released in Salt Water. *Transactions of the American Fisheries Society* 125:300-307.
- Lukacovic, R. and J. Uphoff. 2007. Recreational Catch-and-Release Mortality of Striped Bass Caught with Bait in Chesapeake Bay. FISHERIES TECHNICAL REPORT SERIES No. 50. Maryland DNR Fisheries Service. Annapolis, Maryland. 21 pp.

Table 1. Comparison of reference points, 2017 estimates, and probability that SSB in 2017 is below the SSB threshold for the base case and the four release mortality scenarios explored.

Scenario	SSB threshold	SSB₂₀₁₇	P(SSB₂₀₁₇<SSB_{threshold})	F threshold	F₂₀₁₇
Base Case	91,633	68,141	99.9%	0.24	0.31
Low Mortality	86,231	62,699	99.9%	0.28	0.30
High Mortality	130,783	93,755	99.9%	0.21	0.29
Seasonal	93,469	68,080	99.9%	0.24	0.31
Regional	91,555	66,802	99.9%	0.25	0.32

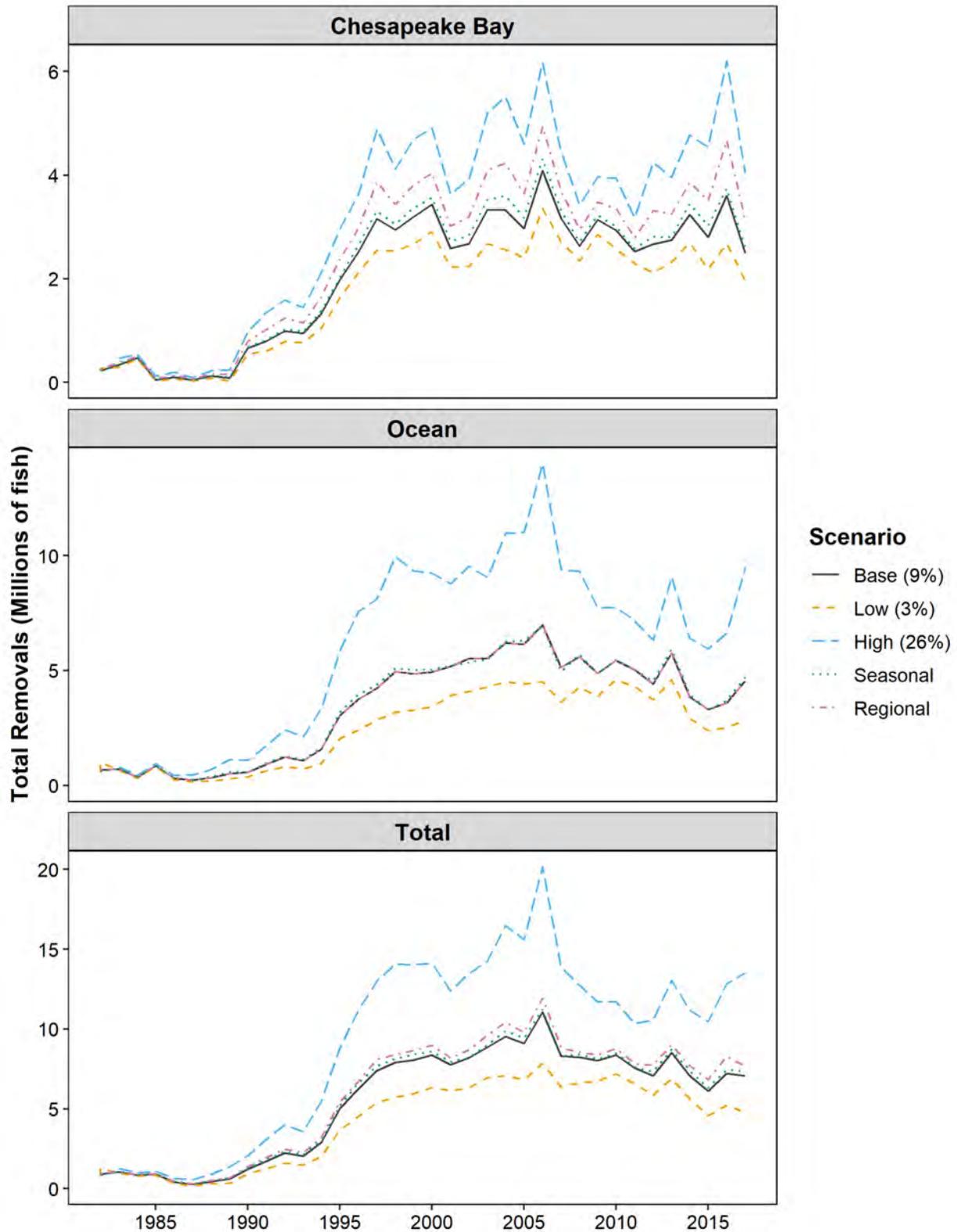


Figure 1. Estimates of total removals by region (top and middle panels) and for the coast (bottom) under different release mortality rate scenarios. Note the difference in scale for the y-axes on each panel.

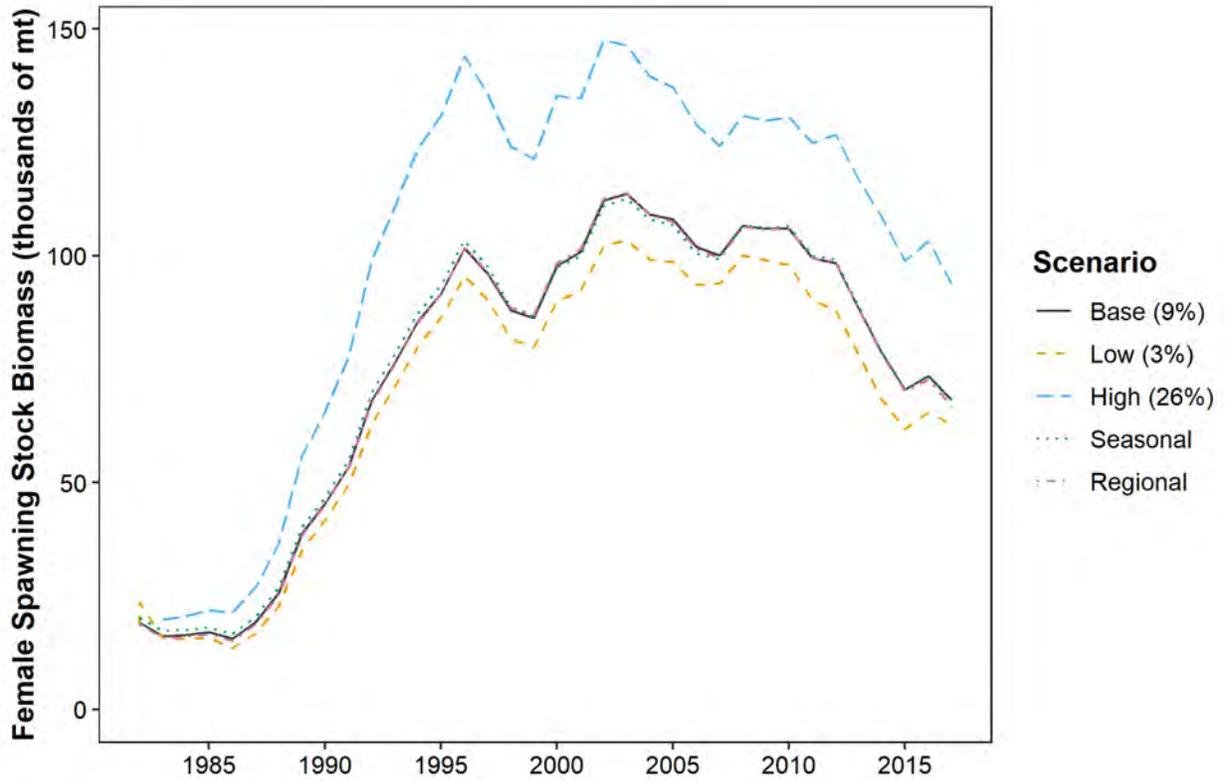


Figure 2. Female spawning stock biomass estimates under different release mortality rate scenarios.

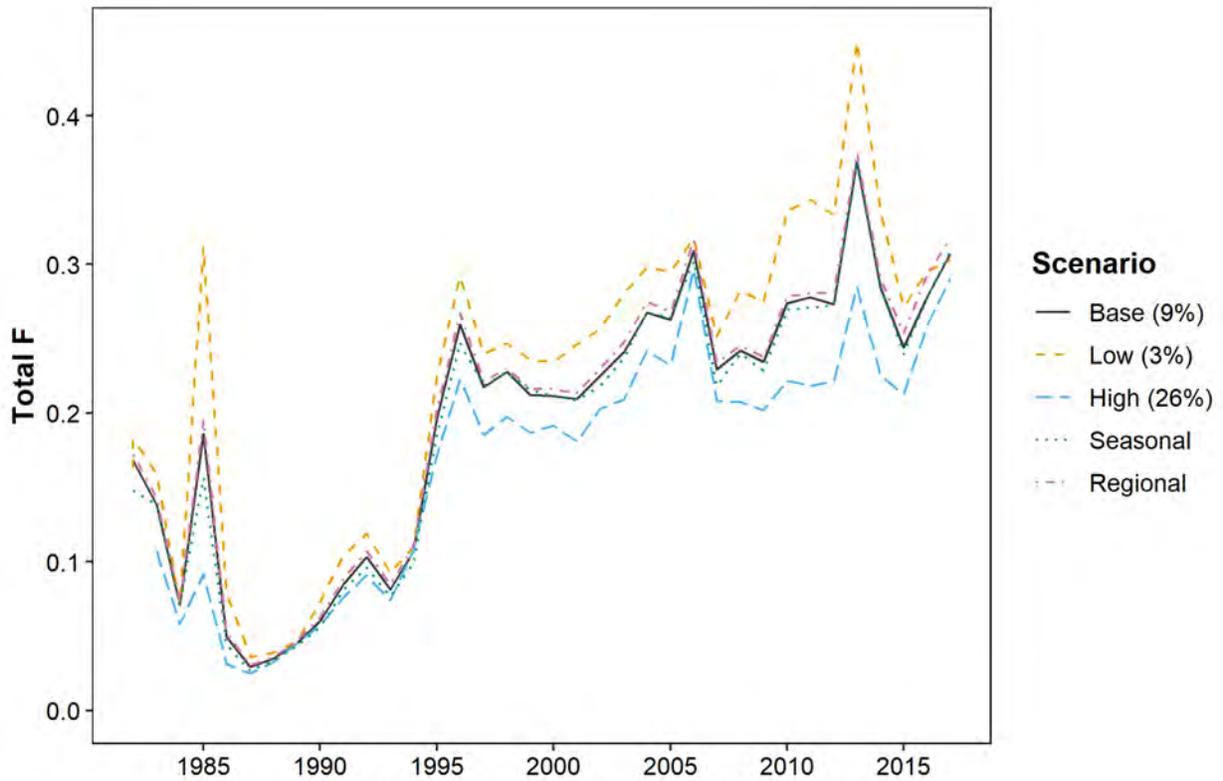


Figure 3. Fishing mortality estimates under different release mortality rate scenarios.

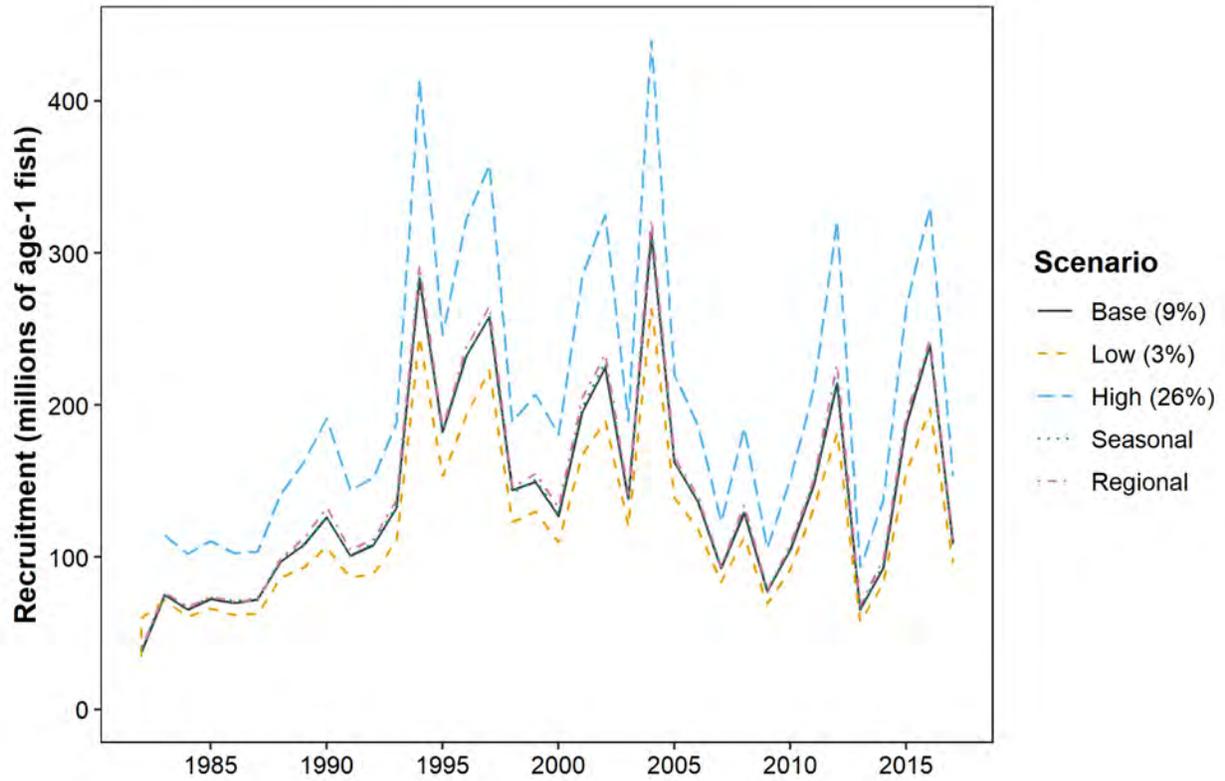


Figure 4. Recruitment estimates under different release mortality rate scenarios.

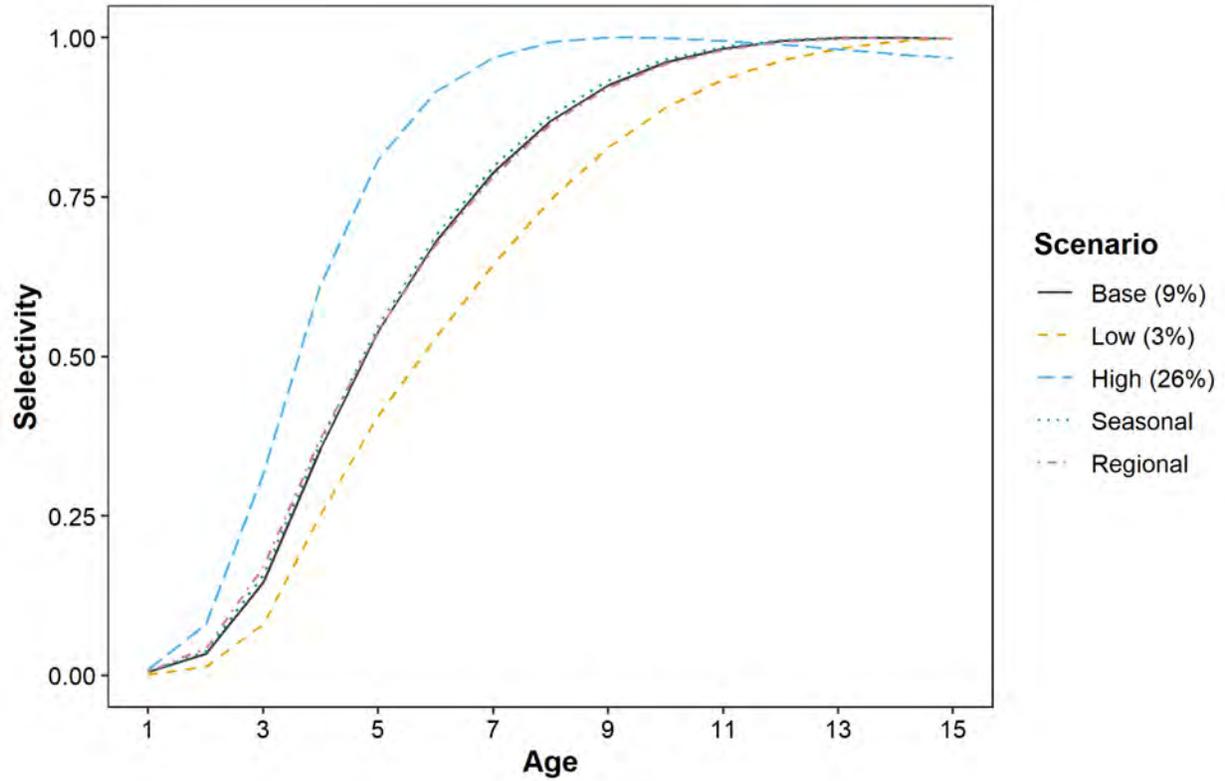


Figure 5. Estimated fishery selectivity patterns under different release mortality rate scenarios.

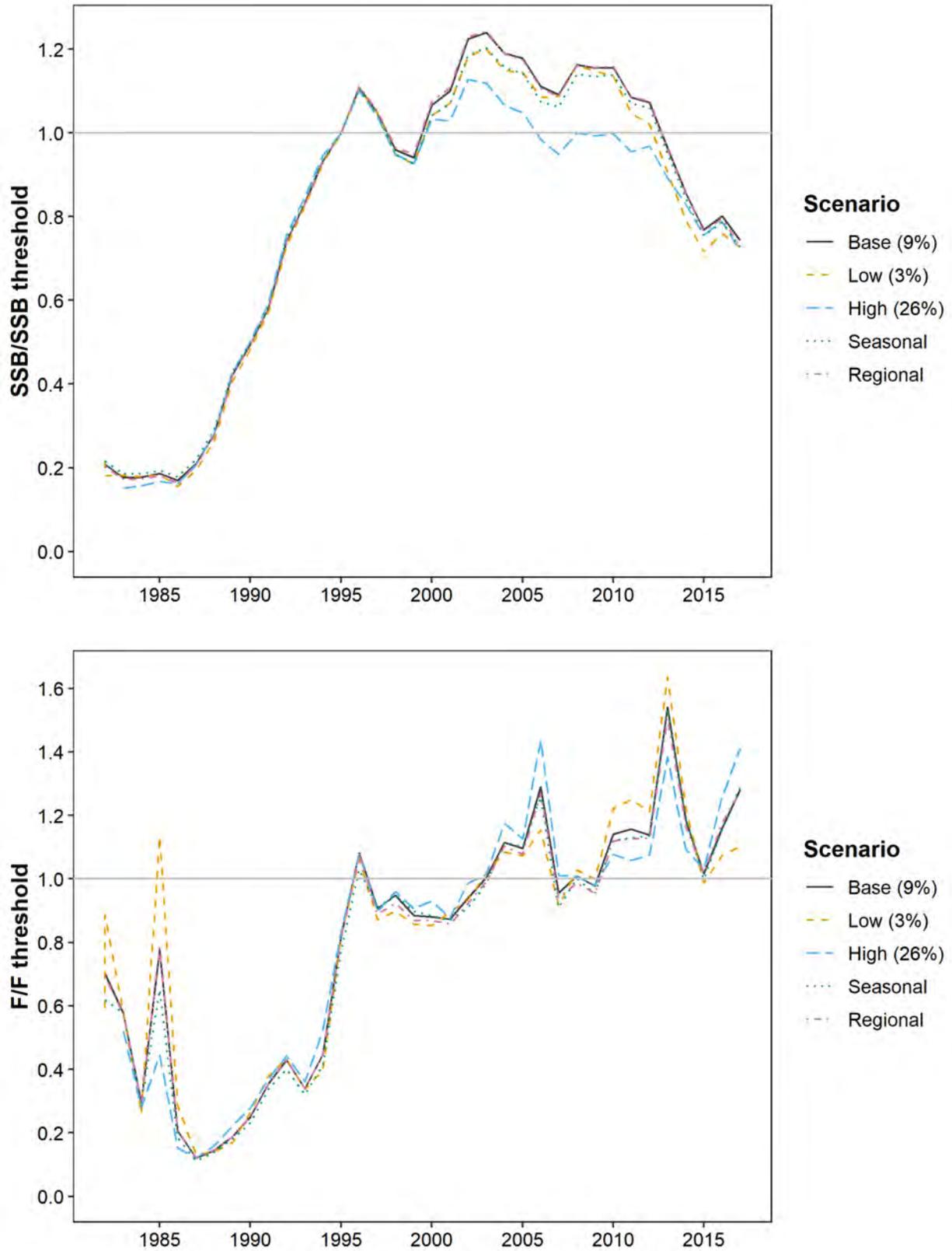


Figure 6. Overfished status (SSB relative to the SSB threshold, top) and overfishing status (F relative to the F threshold, bottom) under different release mortality rate scenarios.



December 30, 2020

Mr. David Borden, Chairman
ASMFC Striped Bass Board
1050 N. Highland Street, Suite 200 A-N
Arlington, Virginia 22201

RE: Reconsideration of the Use of J Hooks with Tube Lures/Jigs when Trolling for Striped Bass

Dear Mr. Borden:

On behalf of recreational striped bass anglers, the for hire fleet and associations that represent them, detailed in this correspondence from Maine to New Jersey, we respectfully ask you to reconsider the recent decision to eliminate all exemptions from the Addendum VI requirement for anglers using in-line circle hooks with natural bait when targeting striped bass. Specifically, we seek to maintain an exemption from this requirement for the trolling of a tube-and-worm rig and jig with a J hook for catching striped bass that has a negligible chance of deep-hooking fish. A tube and worm exemption was proposed by the states of Massachusetts and Maine, which have both been proactive in requiring the use of circle hooks with natural bait prior to the requirements of Addendum VI.

We are fully supportive of the intent of Addendum VI's circle hook provision, which is to reduce the post-release mortality of striped bass in the recreational fishery. We understand the concern of some Striped Bass Board members that providing any exemptions to the circle hook requirement could provide loopholes in certain circumstance that could be exploited by anglers. That being said, we believe that a narrowly-constructed, clearly articulated exemption for the trolling of a tube-and-worm and jig is in the spirit of Addendum VI (reducing discard mortality) while allowing anglers to continue employing a traditional and effective technique.

The tube-and-worm rig consists of a long latex or rubber tube with a single J-hook protruding from the end, which is baited with a large seaworm/sand worm (*Nereis virens*). The rig is trolled slowly behind a moving vessel with the reel engaged (i.e., not in free-spool). Because the boat is moving, the reel is engaged, and the latex/rubber of the tube extends to or beyond the hook gap, the tube-and-worm rig rarely results in the gut-hooking of striped bass.¹ One can conclude the

¹ Daniel McKiernan, Director, MA DMF. MA Implementation Plan for Striped Bass Addendum VI Circle Hook Requirement. Memorandum to Max Appelman, ASMFC Striped Bass Plan Coordinator, dated August 14, 2020.

same utilizing the similar trolling method with jig and associated J hook that generally does not result in the gut-hooking of striped bass.

The use of a J hook when trolling with artificial lures (tube and worm/eel skin, jigs with pork rinds, etc.) with live or dead bait is a reliable method to reduce post release mortality, in most cases the striped bass is hooked in the jaw and not deep in the throat or gut. Furthermore, a circle hook used with trolled a tube or jig will not effectively catch fish because circle hooks are not designed for this. The use of these methods with a J hook is effective, straightforward, and reduces post release mortality.

It should be noted the NMFS HMS FMP requires, when fishing for shortfin mako, the use of circle hooks with an exemption for artificial lures or flies. We recommend you refer to this measure as well as the State of Maine requirements noted below for use of tube and worm with a J hook as a baseline or criteria to utilize when fishing for striped bass.

Our recreational fishery suffers from a reduction in younger anglers entering the fishery. These simple, straight-forward trolling methods often result in the first fish caught by young anglers, and to limit such will negatively impact the entrance of young anglers into the fishery. In addition, conservation measures that do not make sense to fisherman or do not effectively reduce post release mortality could diminish buy-in for new regulations and reduce compliance with the circle hook mandate. Ultimately, many recreational fishers want to do the right thing to help striped bass, but we feel these measures will cause more harm than good.

The ban on use of worms while striped bass fishing will have a negative economic impact on coastal tackle shops and worm diggers from Maine. Many for hire-boats spend \$2,000 per year annually on worms (tube and worm) purchased from their local tackle shops. Mr. Peter Santini of Fishing Finatics, a tackle shop in Everett, MA, purchases more wholesale Maine seaworms than any other shop in the Boston area. He told us that 75% of the worms he sells annually is for tube and worm rigs, along with thousands of dollars' worth of tubes. That's a big part of his market, which is now closed off to him, and that reduction, multiplied by all the coastal tackle shops in the Northeast, will certainly negatively impact the Maine worm diggers as well. In addition, when anglers enter a tackle shop to purchase worms, they often buy other tackle items as well. To remove such will result in decreased sales and/or revenue. The impact to tackle manufacturers, tackle shops and the hard working worm diggers from Maine will be significant, especially during these tough economic times as a result of COVID.

To allow for the use of the techniques noted above, we propose a very specific coast-wide exemption that allows the use of the tube-and-worm rig with a J-hook when trolling and using natural bait. If a coast-wide exemption is not feasible, we would ask that individual states be allowed to include such an exemption in their regulations. We support the wording that Maine's Department of Marine Resources has used for tube and worm, below:

- It is unlawful to use any hook other than a non-offset circle hook when using bait.
- **Exception:**

- Rubber or latex tube lures may be used without a circle hook as long as they are a minimum of 8 inches long and have a single hook protruding from the end portion of the tubing where bait may be attached.²

We further request that jigs (lead-head style, dressed with natural or synthetic hair) also be exempted from the circle hook requirement, as long as the jig has a single fixed hook protruding from the end portion where bait may be attached. Exempting pork rind attached to a trolled lure should also be considered.

As the Striped Bass Management Board prepares to release a Public Information Document as part of the Amendment 7 process, stakeholder engagement will be critical. Implementation of an exemption to the Addendum VI circle hook requirement for the tube-and-worm rig and jig with a J hook will demonstrate to the recreational community the Board's willingness to listen to and work with anglers to promote striped bass conservation while avoiding undue burdens. Such a demonstration of good faith will only serve to benefit both fishermen and the resource as we collectively work to improve striped bass management and rebuild the stock. Based on the lines of evidence detailed above, we hope you will reconsider and retract the ban on use of J hooks with live or dead bait while trolling via tube and worm or a jig when fishing for striped bass.

Thank you for your consideration of this important matter.

Very truly yours,

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² Maine Department of Marine Resources. 2020 Maine Striped Bass Regulations.
https://www.maine.gov/dmr/recreational-fishing/regs-tips/documents/2020_striped_bass_regs.pdf.

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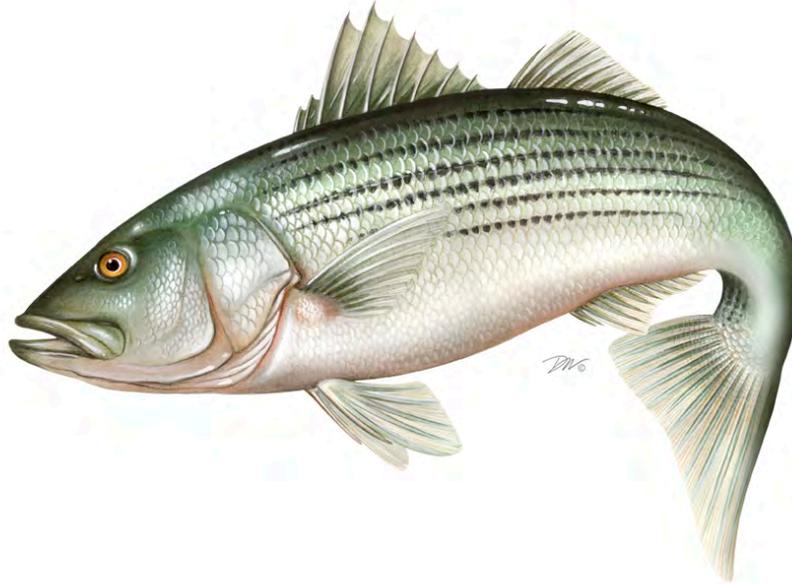
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Atlantic States Marine Fisheries Commission

PUBLIC INFORMATION DOCUMENT

**For Amendment 7 to the
Interstate Fishery Management Plan For**

ATLANTIC STRIPED BASS



February 2021

Sustainable and Cooperative Management of Atlantic Coastal Fisheries



This draft document was developed for Management Board review and discussion. This document is not intended to solicit public comment as part of the Commission/State formal public input process. Comments on this draft document may be given at the appropriate time on the agenda during the scheduled meeting. If approved, a public comment period will be established to solicit input on the issues contained in this document.

The Atlantic States Marine Fisheries Commission seeks your input on the initiation of Amendment 7 to the Atlantic Striped Bass Fishery Management Plan

The public is encouraged to submit comments regarding this document during the public comment period. Comments must be received **by 5:00 PM (EST) on Month Day, 2021**. Regardless of when they were sent, comments received after that time will not be included in the official record. The Atlantic Striped Bass Management Board will consider public comment on this document when developing the first draft of Amendment 7.

You may submit public comment in one or more of the following ways:

1. Attend public hearings held in your state or jurisdiction, if applicable.
2. Refer comments to your state's members on the Atlantic Striped Bass Board or Atlantic Striped Bass Advisory Panel, if applicable.
3. Mail, fax, or email written comments to the following address:

Emilie Franke
Fishery Management Plan Coordinator
Atlantic States Marine Fisheries Commission
1050 North Highland Street, Suite 200A-N
Arlington, Virginia 22201
Fax: 703.842.0741
comments@asmfc.org (subject line: Striped Bass PID)

If you have any questions please call Emilie Franke at 703.842.0740.

**YOUR
COMMENTS ARE
INVITED**

The Atlantic States Marine Fisheries Commission (Commission) is developing an amendment to revise the Interstate Fishery Management Plan (FMP) for Atlantic striped bass. The Commission is responsible for developing fishery management plans for Atlantic striped bass which are based on the best available science and promote the conservation of the stock throughout its range. The states and jurisdictions of Maine through North Carolina, including Pennsylvania, the District of Columbia, and the Potomac River Fisheries Commission, participate in the management of this species as part of the Commission's Atlantic Striped Bass Management Board (Board).

This is your opportunity to inform the Commission about changes observed in the fishery, actions you feel should or should not be taken in terms of management, regulation, enforcement, and research, and any other concerns you have about the resource or the fishery, as well as the reasons for your concerns.

**WHY IS THE
ASMFC
PROPOSING THIS
ACTION?**

The last time a new plan amendment to the Atlantic Striped Bass FMP was adopted was in 2003 (Amendment 6). Since then, the status and understanding of the striped bass stock and fishery has changed considerably which raises concern that the current management program no longer reflects current fishery needs and priorities. The results of the 2018 Benchmark Stock Assessment in particular led the Board to discuss a number of significant issues facing striped bass management. Consequently, in August 2020, the Board passed the following motion:

“Move to initiate an Amendment to the Atlantic Striped Bass Fishery Management Plan focused on the following management topics: (1) fishery goals and objectives; (2) stock rebuilding/timeframe; (3) management triggers; (4) biological reference points; (5) regional management (recreational measures, coastal and producer areas, regional reference points); (6) recreational discard mortality; (7) conservation equivalency; (8) recreational accountability; and (9) coastal commercial quota allocation.

Each of these topics will be presented in a Public Information Document in order to solicit stakeholder comment focused on prioritizing the importance of each topic for continued development and inclusion in the Amendment.”

**WHAT IS THE
PROCESS FOR
DEVELOPING AN
AMENDMENT?**

The publication of this document is the first step of the Commission's formal amendment process. Following this initial phase of information gathering and public comment, the Commission will evaluate potential management alternatives. The Board will select the range of issues to be addressed through this Amendment, and identify potential management options; other issues not addressed here can be addressed through a subsequent management

document. The Commission will then develop Draft Amendment 7, incorporating the identified management options, for public review. Following that review and public comment, the Commission will specify the management measures to be included in Amendment 7, as well as a timeline for implementation. In addition to issues identified in this Public Information Document (PID), Draft Amendment 7 may include issues identified during the public comment period of the PID.

The timeline for completion of Amendment 7 is as follows. Please note that the timeline is subject to change per the direction of the Board:

February 2021	Board reviews Draft PID and considers approving for public comment <i>Current Step</i>
February - April 2021	Public comment on PID
May 2021	Board reviews public comment; directs Plan Development Team to develop Draft Amendment
May - September 2021	Preparation of Draft Amendment with input from Technical Committee and Advisory Panel
October 2021	Board reviews Draft Amendment and considers approving for public comment
November 2021- January 2022	Public comment on Draft Amendment
February 2022	Board reviews public comment and selects final measures for the Amendment; Policy Board and Commission approve the Amendment

WHAT IS THE PURPOSE OF THIS DOCUMENT?

The purpose of this document is to inform the public of the Commission’s intent to gather information concerning Atlantic striped bass and to provide an opportunity for the public to identify major issues and alternatives relative to the management of this species. Input received at the start of the amendment process can have a major influence in the final outcome of the amendment. This document is intended to solicit observations and suggestions from commercial and recreational anglers, the public, and other interested parties, as well as any supporting documentation and additional data sources.

To facilitate public input, this document provides a broad overview of the issues already identified for consideration in the amendment; background information on the Atlantic striped bass population, fisheries, and management; and a series of questions for the public to consider about the management of the

species. In general, the primary question on which the Commission is seeking public comment is: **“How would you like management of the Atlantic striped bass fishery to look in the future?”**

**WHAT
ISSUES WILL
BE
ADDRESSED?**

The primary issues considered in the PID are:

1. Fishery Goals and Objectives
2. Biological Reference Points
3. Management Triggers
4. Stock Rebuilding Targets and Schedule
5. Regional Management
6. Management Program Equivalency (Conservation Equivalency)
7. Recreational Release Mortality
8. Recreational Accountability
9. Coastal Commercial Allocation
10. Any other issues concerning the management of Atlantic striped bass

**ISSUE 1:
Fishery Goals
and Objectives**

Background: The current goal and objectives of the Atlantic Striped Bass FMP were established in 2003 in Amendment 6. They are:

GOAL

“To perpetuate, through cooperative interstate fishery management, migratory stocks of striped bass; to allow commercial and recreational fisheries consistent with the long-term maintenance of a broad age structure, a self-sustaining spawning stock; and also to provide for the restoration and maintenance of their essential habitat.”

OBJECTIVES

- Manage striped bass fisheries under a control rule designed to maintain stock size at or above the target female spawning stock biomass level and a level of fishing mortality at or below the target exploitation rate.
- Manage fishing mortality to maintain an age structure that provides adequate spawning potential to sustain long-term abundance of striped bass populations.
- Provide a management plan that strives, to the extent practical, to maintain coastwide consistency of implemented measures, while allowing the States defined flexibility to implement alternative strategies that accomplish the objectives of the FMP.
- Foster quality and economically viable recreational, for-hire, and commercial fisheries.
- Maximize cost effectiveness of current information gathering and prioritize state obligations in order to minimize costs of monitoring and management.

- Adopt a long-term management regime that minimizes or eliminates the need to make annual changes or modifications to management measures.
- Establish a fishing mortality target that will result in a net increase in the abundance (pounds) of age 15 and older striped bass in the population, relative to the 2000 estimate.

Statement of the Problem: The status and understanding of the striped bass stock and fishery has changed considerably since implementation of Amendment 6 in 2003. As a result, both managers and stakeholders have expressed concern that the existing goals and objectives of this management program may be outdated, and no longer fully reflect current fishery needs and priorities. Some of the objectives may need to be refined, while other priorities may be missing entirely. The Board identified management stability, flexibility, and regulatory consistency as guiding themes for future striped bass management, and discussed the desire to balance these principles to the extent practical.

Public Comment Questions: Are the existing goal and objectives of Amendment 6 still in line with current fishery needs and priorities? Which specific priorities (if any) are missing from the existing goal or objectives? Which of the existing objectives (if any) should be removed or refined? Do the existing objectives balance the need for management stability, flexibility, and regulatory consistency? Which of these three themes do you value most?

**ISSUE 2:
Biological
Reference
Points**

Background: Biological reference points (BRPs) are used in fisheries management to measure stock status and evaluate management plan effectiveness. The current BRPs for striped bass are coastwide in nature and based on historical stock performance, and given in terms of threshold and target levels of female spawning stock biomass (SSB) and fishing mortality (F). Specifically, the 1995 estimate of female SSB is used as the SSB threshold, with the SSB target set at 125% of the threshold. When female SSB is below the threshold level, the stock is declared overfished. The F target and threshold are the values of F estimated to achieve the respective SSB target and threshold over the long-term. When F is above the threshold, the stock is experiencing overfishing. The current SSB and F target and threshold values are based on results of the 2018 Benchmark Stock Assessment, which represents the best available science on the coastwide stock (NEFSC 2018a and 2018b; Table 1). The FMP manages towards the target levels, providing an additional buffer to help achieve the management plan's objectives.

Table 1. Current female spawning stock biomass (SSB) and fishing mortality (F) target and threshold reference points for Atlantic striped bass based on results of the 2018 benchmark assessment.

	Female SSB	F
Threshold	$SSB_{1995} = 91,436$ mt (202 million lbs)	0.24
Target	$SSB_{\text{threshold}} \times 1.25 = 114,295$ mt (252 million lbs)	0.20

The female SSB threshold and target were first implemented through Amendment 6 in 2003. Model-based reference points, such as the biomass needed to achieve maximum sustainable yield (MSY), were uncertain, resulting in reliance on empirical-based reference points. The SSB in 1995 was selected as the threshold because that was the year the Commission declared the stock recovered from its depleted status in the 1980s, and many desirable stock characteristics were achieved, such as an expanded age structure. The additional 25% buffer for the target was an ad hoc decision to account for uncertainty in the SSB estimates, and also produced a target value comparable to those observed prior to the stock's collapse in the 1970's. The current F reference points were implemented in 2014 through Addendum IV to Amendment 6 and are linked to the SSB reference points. The previous F reference points were calculated independently of the SSB reference points and were based on MSY. The 2013 Benchmark Stock Assessment moved away from that approach primarily due to uncertainty in the F_{MSY} estimates because of difficulty fitting a stock-recruit relationship and the inconsistency between the F_{MSY} reference point and the empirical SSB reference points.

While the definitions for the SSB threshold and target have remained unchanged since 2003, the estimated female SSB time series (values and trajectories) has changed with each new stock assessment. Those changes are often more pronounced in a benchmark assessment as new or improved data and advancements in population modeling are incorporated. As a result, the female SSB reference point values, and the Commission's understanding of stock performance has changed over time.

Figure 1 shows results of the last four benchmark stock assessments for striped bass (2002, 2007, 2013, and 2018 benchmarks) which demonstrate how the Commission's understanding of stock condition in 1995 has changed over time. Note that in 2003, when the SSB reference points were established, the most recent assessment information indicated the stock was above the SSB target. Also, while the general pattern of SSB is consistent across the assessments, the magnitude of the estimates and trajectories have changed. For example, the 2007 and 2013 benchmark assessments indicated female SSB was above the SSB target for a period of time during the early 2000s. This fits our

understanding of striped bass population dynamics, as the population was considered to be at a historically high level during that time period, but the 2018 benchmark shows the SSB target has not been reached at any point during the 1982-2017 time series. It is worth noting, however, the 2018 benchmark also indicates F has consistently exceeded the F associated with achieving the SSB target since 1996 (Figure 2). Given the 2018 benchmark assessment found overfishing was occurring and the SSB was below the target even during those years that the striped bass population was at a historically high level, the current reference points may be unattainable.

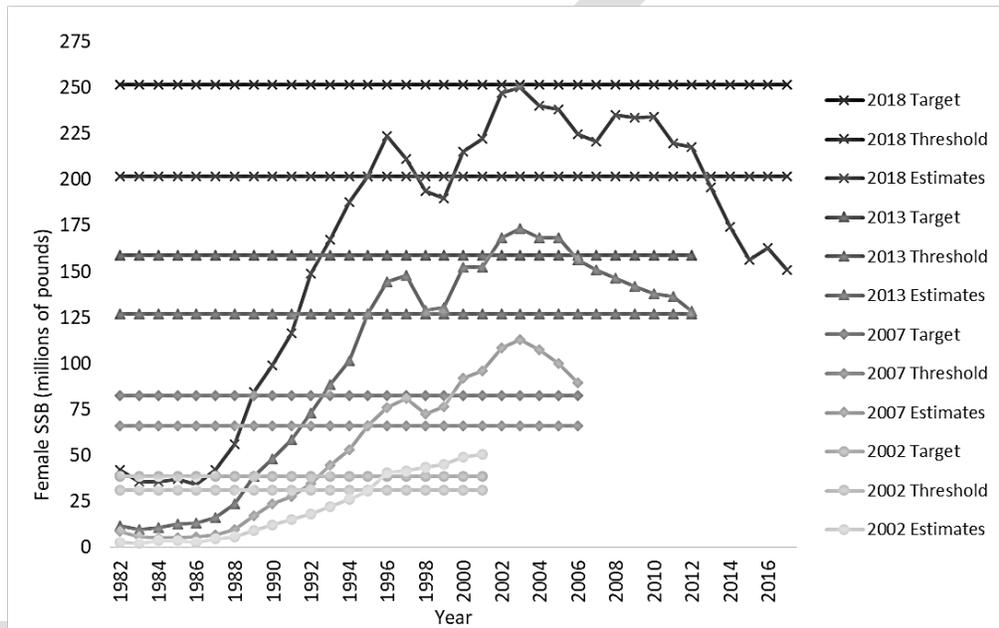


Figure 1. Historical perspective of Atlantic striped bass female spawning stock biomass (SSB) estimates and resulting SSB target and threshold since implementation of Amendment 6 in 2003. The SSB threshold and target are based on the estimate of female SSB in 1995 which has changed over time with improved data and modeling techniques. Source: ASMFC.

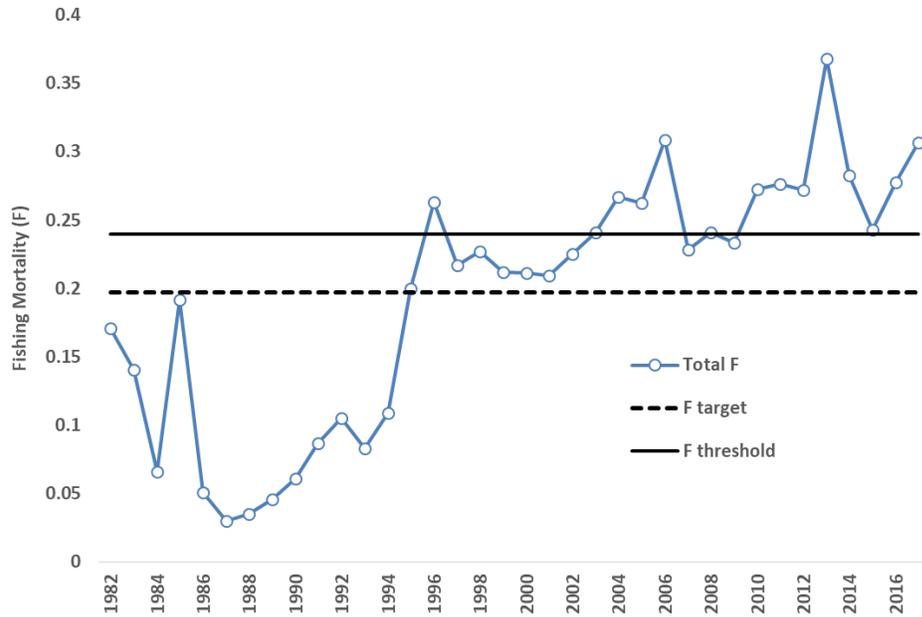


Figure 2. Current estimates of fishing mortality (F) relative to the F target and threshold, 1982-2017. Source: NEFSC 2018a.

Potential alternatives to the current reference points are restricted by data and modeling limitations. Unfortunately, the statistical-catch-at-age (SCAA) model currently used in striped bass stock assessment is unable to produce reasonable estimates for model-based reference points, such as MSY or SPR (spawning potential ratio). The Technical Committee (TC) has made considerable progress on a two-stock SCAA model which may be able to produce reasonable SPR-based reference points in the future, but the model needs more work and is not available for management use at this time. However, other empirical-based reference points could be considered, such as the estimate of SSB in a year other than 1995 as the SSB threshold, or a percentage other than 125% for the SSB target. For example, the TC discussed 1993 as a possible alternative proxy year because SSB was lower than in 1995 but still produced a strong year-class (Figure 3).

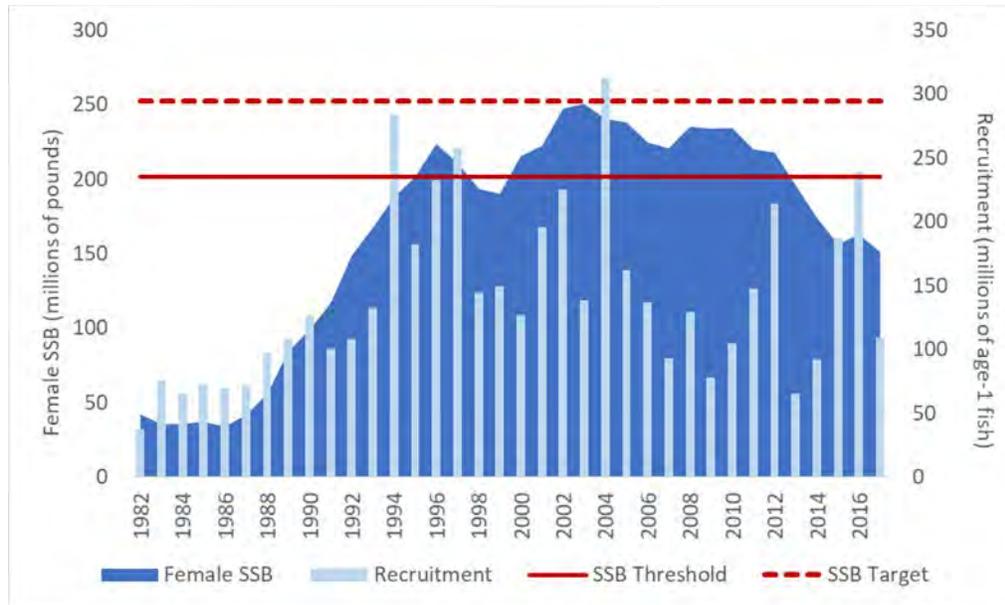


Figure 3. Current estimates of female spawning stock biomass (SSB) relative to the SSB target and threshold, and recruitment (age-1 fish), 1982-2017. The 1994 recruitment estimate, which represents the 1993 year-class, was the first large recruitment event in the time series. Source: NEFSC 2018a.

The Atlantic Striped Bass FMP has also managed specific areas of the fishery with different F rates (i.e., the Chesapeake Bay, and the Albemarle Sound/Roanoke River (A/R) management area in North Carolina), although these F rates were not used to determine overall stock status and are not considered BRPs in the context of this section. The Board has expressed interest in establishing separate reference points for the primary stocks that contribute to the coastwide migratory population, but the current SCAA model does not allow for this. The two-stock SCAA model that is under development has the potential to produce a set of reference points for the Chesapeake Bay stock and for the ocean region (which includes the Delaware Bay/Hudson River stock complex), but this remains a long-term objective. However, the current SCAA model does separate fishery removals into two fleets or regions, and these fleet components could be used to explore regional management programs which is discussed in Issue 5: Regional Management (page 13).

Statement of the Problem: It's approaching two decades since the 1995 estimate of female SSB was selected as the basis for BRPs for striped bass. However, improved data and advancements in assessment modeling have changed our understanding of historical stock performance since the stock was declared restored. This is an appropriate time to revisit the BRPs to ensure they are reliable indicators of stock performance and are properly aligned with the FMP's goal and objectives.

Public Comment Questions: Is the 1995 estimate of female SSB still an appropriate benchmark for determining stock status? Is there a better empirical reference year or other empirical approach that should be considered? Is a 25% buffer appropriate for the SSB target? Should the Board prioritize development of model-based reference points and/or stock-specific reference points for the Chesapeake Bay and other stock components? What stock characteristics (abundance of large fish available to anglers, diverse age structure, etc.) should the BRPs attempt to achieve to balance the needs of diverse striped bass fisheries and the state of the resource?

**ISSUE 3:
Management
Triggers**

&

**ISSUE 4:
Stock Rebuilding
Target and
Schedule**

Background: Amendment 6 includes a series of management triggers to prevent overfishing the striped bass resource. The triggers are based on the BRPs and juvenile recruitment indices, and are paraphrased below. Management measures implemented by the Board are to be held in place for at least three years, unless a trigger or threshold is violated (although CE has allowed for exceptions to this 3-year timeframe; see Issue 6 on page 15). Upon reaching any (or all) of these triggers, the Board is required to modify the management program to ensure the goal and objectives of Amendment 6 are achieved.

Management triggers established in Amendment 6 are:

- 1) If the F threshold is exceeded in any year, the striped bass management program must be adjusted to reduce the F to a level that is at or below the target within one year.
- 2) If female SSB falls below the threshold, the striped bass management program must be adjusted to rebuild the biomass to the target level within an established timeframe [not to exceed 10-years].
- 3) If the F target is exceeded in two consecutive years and the female SSB falls below the target within either of those years, the striped bass management program must be adjusted to reduce the F to a level that is at or below the target within one year.
- 4) If female SSB falls below the target for two consecutive years and the fishing mortality rate exceeds the target in either of those years, the striped bass management program must be adjusted to rebuild the biomass to a level that is at or above the target within an established timeframe [not to exceed 10-years].
- 5) If any Juvenile Abundance Index shows recruitment failure (i.e., an index value lower than 75% of all other values in the dataset) for three consecutive years, then the Board will review the cause of recruitment failure (e.g., fishing mortality, environmental conditions, and disease) and determine the appropriate management action.

The BRP-based management triggers require action on different timelines. When the F-based triggers are met, corrective action is required quickly, as management action can reduce F immediately by reducing total removals. When the SSB-based triggers are met, changes to the management program can occur gradually over a long period of time (up to 10-years); this is in recognition of the fact that striped bass are slow to mature, with 100% of females reaching maturity by age 9, and as a result, the impact of management action on SSB will not be fully realized until the protected age classes are mature. This also provides stability for the fishery while rebuilding the stock. The latest science also indicates that the SSB target has never been reached which raises questions that it may be an unreasonably high management target given current objects for fishery performance and changing or altered ecosystem conditions (e.g., climate change, and changes in other predator and prey population abundance). Meanwhile, the recruitment-based trigger is evaluated on a 3-year cycle and has not been triggered since it was established, even though the stock experienced a period of variable, but below average recruitment from about 2005-2014 which contributed to stock declines in recent years.

Of note, the BRP-based management triggers are based on the most recent estimate of F and/or SSB. While significant changes in SSB tend to occur slowly over time due to the biology of the species (i.e., long lived and late to mature), F is a measure of fishing pressure which is variable from year-to-year. As a result, the Board is sometimes criticized for having 'knee-jerk' reactions when responding to a single point estimate of F. Additionally, development of both short- and long-term rebuilding programs are informed by simulations of stock performance in the future based on assumptions of F, recruitment, and other variables. As a result, these stock projections are inherently uncertain, particularly the further out they project.

Statement of the Problem: The management triggers are intended to keep the Board accountable and were developed at a time when the stock was thought to be at historic high abundance and well above the SSB target. However, as perceptions of stock status and fishery performance have changed, shortfalls with how the management triggers are designed have emerged. When SSB is below the target level, the variable nature of F can result in a continued need to for management action. Additionally, the shorter timetables for corrective action are in conflict with the desire for management stability, and the use of point estimates introduces an inherent level of uncertainty in decision making. Furthermore, the Board is sometimes criticized for considering changes to the management program before the stock has a chance to respond to the most recent set of management changes. Lastly, the observed long period of below average recruitment which contributed to recent declines in biomass has raised

questions about the recruitment-based trigger and whether it is designed appropriately.

Public Comment Questions: Which management triggers (if any) should be revisited? What is an appropriate timeframe to respond to overfishing or overfished determinations? Should the F-based triggers account for annual variability in fishing mortality? What is more important, rebuilding the stock quickly, or mitigating impacts to fisheries? In other words, do you prefer significant changes to rebuild the stock quickly, or smaller incremental changes over time to gradually rebuild the stock?

**ISSUE 5:
Regional
Management**

Background: The Atlantic striped bass population is assessed and managed on a coastwide basis. However, the population is actually comprised of several stocks each with unique contributions to the coastwide population. Striped bass fisheries are conducted very differently throughout the species range due to the size and availability of fish in those areas (and other cultural differences), although there are some regional similarities.

To address this, previous striped bass management programs have managed specific regions of the fishery differently. Under Amendment 5 (1995), fisheries in the Chesapeake Bay and A/R were managed under a lower F rate than the rest of the coast which allowed these regions to implement different harvest strategies including size limits, bag limits, and catch quotas. Fisheries included in the ocean region, like in the Delaware Bay and River, and the Hudson River, were also able to implement lower size limits during certain seasons, although this was accomplished through management program equivalency (see Issue 6 on page 15). This regional management approach for the Chesapeake Bay and the A/R was maintained in Amendment 6. However, with implementation of Addendum IV to Amendment 6 in 2015, the entire striped bass population is once again managed under the same F rate (i.e., the coastwide F reference points). Addendum IV also formally defers management of the A/R stock to the state of North Carolina (under the auspices of the Commission) based on evidence that the stock contributes minimally to the coastwide population.

Although the coastwide F reference points include the effects of harvesting smaller striped bass in the Chesapeake Bay (and in other areas like the Delaware Bay and Hudson River), they do not reflect the heavily male-skewed sex ratio in the Chesapeake Bay catch. During the 2018 benchmark assessment, the current single-stock SCAA model was modified into a competing two-stock SCAA model; a Chesapeake Bay stock and a mixed ocean stock which included all other stock components of the population. The intent of the two-stock model approach was to develop separate reference points for the Chesapeake Bay stock and the ocean region (which includes the Delaware Bay/Hudson River

stock complex), however, this model requires further testing and is not ready for management at this time.

There are stock assessment tools available now that the Board could use to pursue a different management program for the Chesapeake Bay region. The current single-stock SCAA model separates fishery removals into an ocean fleet and a Chesapeake Bay fleet, and these fleet components can be used to explore different management programs for the two regions. This approach would be unique in the Commission framework and would raise a number of questions about implementation. In this scenario, the F target and threshold would be set for the entire coastwide stock complex, and the Chesapeake Bay region and the ocean region would be allocated a proportion of the overall F to manage towards. With further model development, additional regions could be added. The Board would decide how to allocate total F to each region, which could be based on historical performance of each fishery or other management objectives. The Board would also have to decide how to implement accountability for each region. Currently, if total removals have to be reduced to bring the overall coastwide F down to the F target, both regions take an equal percent cut. With a regional F management program, the reduction could be based on whether a region has exceeded its allocation of F and by how much. The Board would also have to consider whether a region would have to reduce harvest if it exceeds its regional F allocation, but the overall F for the stock was not exceeded.

Statement of the Problem: An ongoing objective of the Atlantic Striped Bass FMP is to provide regional flexibility while maintaining coastwide regulatory consistency to the extent practical. Previous striped bass management regimes have allowed specific regions to manage their fisheries independently (under a different F rate than the rest of the coast) to balance these competing priorities. While the development of stock-specific reference points has been identified as a research priority, there are tools available now that the Board could use to pursue different management programs for the Chesapeake Bay and ocean regions. However, the appropriate allocation of F between these two regions is ultimately a policy decision, and must be considered carefully along with other management implications.

Public Comment Questions: Should separate regional management programs be pursued for the Chesapeake Bay and the ocean region, which includes the Delaware Bay/Hudson River stock complex? If so, how should the Board determine the appropriate allocation of F between the two regions? Should the Board consider any other areas (e.g. Delaware River or Hudson River) for separate regional management programs? If so, what level of data should support additional regional separation? Should development of similar

assessment tools be prioritized to support regional management programs for other areas of the coast?

ISSUE 6
Management
Program
Equivalency
(Conservation
Equivalency)

Background: Management program equivalency (hereafter referred to as 'conservation equivalency' or CE) has been an explicit component of the striped bass management program since the stock was declared rebuilt in 1995. The Atlantic Striped Bass FMP (and Commission's ISFMP Charter) employs CE to provide states and jurisdictions (hereafter states) flexibility to develop alternative regulations that achieve the same quantified level of conservation for the resource as the FMP standards. Allowing states to tailor their management programs in this way avoids the unequal impacts that result from implementing one set of management measures for all states.

The striped bass population is managed on a coastwide basis, although the fisheries are executed very differently due to size and availability of fish and a wide range of fishing cultures and priorities. This makes it difficult to develop a 'one-size-fits-all' regulation for the entire fishery. Early striped bass CE programs addressed areas where only a portion of the stock was available, e.g. areas were approved to have smaller size limits because large fish were not available during the summer. The primary motivation for more recent CE programs has been for states to propose alternative measures to ameliorate social and economic impacts of actions to reduce harvest. States typically pursue CE to adjust commercial size limits and quotas, or to implement different recreational bag limits, size limits, and seasons.

The process and application of CE is detailed in the Commission's [Conservation Equivalency Policy and Technical Guidance Document](#). To implement CE, states must develop a CE proposal demonstrating, through quantitative analysis, how the proposed regulations are equivalent to the FMP standards. Guidance regarding data use and methods that states should follow when developing CE proposals are typically provided by the TC, while the Board determines what constitutes equivalency on an ad hoc basis (e.g., the level of harvest (or reduction) that proposed measures must achieve). All CE proposals are subject to technical review and Board approval before the state can implement a CE program, as well as a post-implementation review of effectiveness. However, it is challenging to evaluate the effectiveness or success of CE programs once implemented because of the difficulty in separating the effects of the CE program from other factors like angler behavior and availability of fish that determine the amount of catch and release (see Issue 7 and Issue 8 on page 16 and 19, respectively) that occurs. As a result, CE programs, once implemented, typically become the new baseline for future regulatory changes for that state and fishery. Furthermore, CE proposals for the recreational fishery generally rely on state-level catch and effort data estimated by the Marine Recreational

Information Program (MRIP) which are less precise than regional or coast-wide estimates.

The fundamental conflict between allowing flexibility through CE and achieving regulatory consistency among states escalated recently with the implementation of Addendum VI. For the recreational fishery, the Addendum implemented a 1-fish bag limit and a 28 inch to less than 35 inch slot limit for the ocean region and a 1-fish bag limit and an 18 inch minimum size limit for the Chesapeake Bay in order to reduce recreational removals by 18% coastwide. However, at the state-level, some states were predicted to reduce removals by more than 18% (and some by less) due to varying contributions of each state's fishery to the total, and states needed to only demonstrate an 18% reduction at the state-level in CE proposals, which could result in falling short of overall target reductions. Also, majority of states pursued CE and submitted a very large number of options for TC review, which raised questions for additional guidelines regarding the submission of CE proposals.

Statement of the Problem: There is an essential tension between managing the striped bass fishery on a coastwide basis while allowing states to deviate from the coastwide standard, and thus creating regulatory inconsistency among states and within shared waterbodies. However, there is perceived value in allowing states to implement alternative regulations tailored to the needs of their fisheries, even though it is difficult to evaluate the effectiveness of CE programs once implemented. Both CE programs and coastwide measures have variable levels of effectiveness. A CE program may provide a higher level of conservation than the coastwide measure in a state. However, it is difficult to determine if a coastwide measure or a CE program has performed better or worse due to the challenge of separating the performance of the measure and outside variables, particularly on a state level when more than one state implements a CE program. There is limited guidance on how and when CE should be pursued, particularly when the stock is overfished and rebuilding is required, and how 'equivalency' is defined.

Public Comment Questions: Should CE be part of the Striped Bass FMP? Should the Board restrict the use of CE based on stock status, data restrictions, differences from neighboring state, and/or any other potential issues? Should the Board provide a strict definition for 'equivalency' (e.g., equal to the level of harvest the fishery would have achieved under the standard measure)? Should more quantitatively rigorous and clearly defined data requirements be required as a pre-requisite for CE proposals to be considered? Should there be limitations to how many CE proposals a state can submit? Should CE be limited to time and areas with unique ecological characteristics (e.g., presence of smaller striped bass)? Given state-level MRIP estimates are often less precise than regional or coastwide estimates, are these data used appropriately to

develop CE proposals? Given the variability in recreational catch and harvest from year-to-year, how do you evaluate effectiveness of CE programs following implementation?

ISSUE 7
Recreational
Release
Mortality

Background: Recreational releases are fish caught and released alive during recreational fishing trips. A proportion of releases die as a result of that fishing interaction, which is referred to as release mortality (or dead releases).

The number of striped bass harvested recreationally, as well as those caught and released alive, are estimated by MRIP. The number of striped bass that die after being caught and released is estimated by multiplying the total number of live releases by an estimated rate of hooking mortality. The stock assessment currently applies a 9% hooking mortality rate to all recreationally released striped bass. This does not mean that every time a fish is released alive it has a 9% chance of dying. Under some conditions, the released fish has a higher or lower probability of dying, but overall, coastwide, it is assumed that 9% of all striped bass released alive die.

This 9% hooking mortality rate estimate is from a study by Diodati and Richards (1996) which took place in a saltwater environment and encompassed a range of variables including hook types, hooking locations, and angler experience levels. The TC conducted a meta-analysis of other striped bass release mortality studies which confirmed that an overall 9% discard mortality rate accounts for the variation in conditions and factors that attribute to release mortality coastwide. Applying this hooking mortality rate to the estimated number of striped bass caught and released from 2015 to 2019 results in an annual average of 2.8 million dead releases per year.

Since 1990, roughly 90% of all striped bass caught recreationally were released alive (Figure 4) either due to cultural preferences (i.e., fishing with the intent to catch and release striped bass) or regulation (e.g., the fish is not of legal size, was caught out of season, or the angler already caught the bag limit).

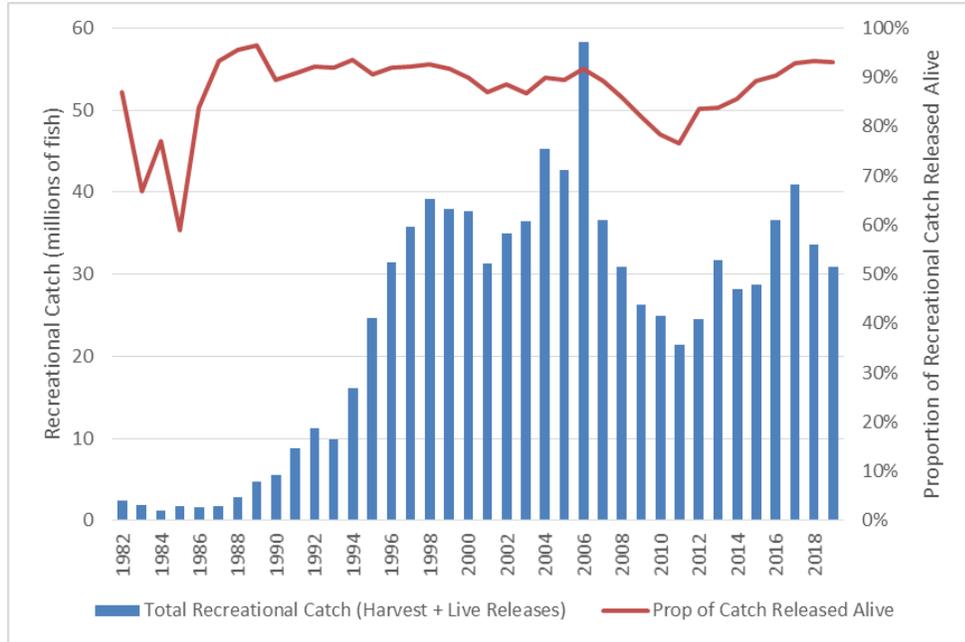


Figure 4. Total recreational catch (harvest + live releases) and the proportion of catch released alive, 1982-2019. Source: MRIP; excludes inshore estimates from A/R in North Carolina.

In 2019, more fish were estimated to have died from catch and release fishing than were harvested by the recreational fishery (2.59 million fish and 2.15 million fish, respectively; Figure 5). Because release mortality accounts for a significant proportion of total fishing mortality, Addendum VI sought to lower the rate at which fish die after being released by requiring the use of non-offset circle hooks when fishing for striped bass with bait (circle hooks have been proven to help reduce rates of gut-hooking when fished correctly). In addition to hook type, studies have shown other factors influence release mortality including environmental conditions (e.g., salinity, air and water temperatures), angler experience, and angler behavior (e.g., how fish are handled). Addendum VI also encourages states to develop education campaigns to increase compliance with circle hook regulations and to encourage responsible angler behavior. If management action is taken to influence where mortality (harvest vs discard) is coming from, managers will have to consider the impacts those actions will have on the fishery. For example, management measures focusing on reducing discards could discourage participation from anglers that value food fish and negatively impacts the industry which caters to those anglers.

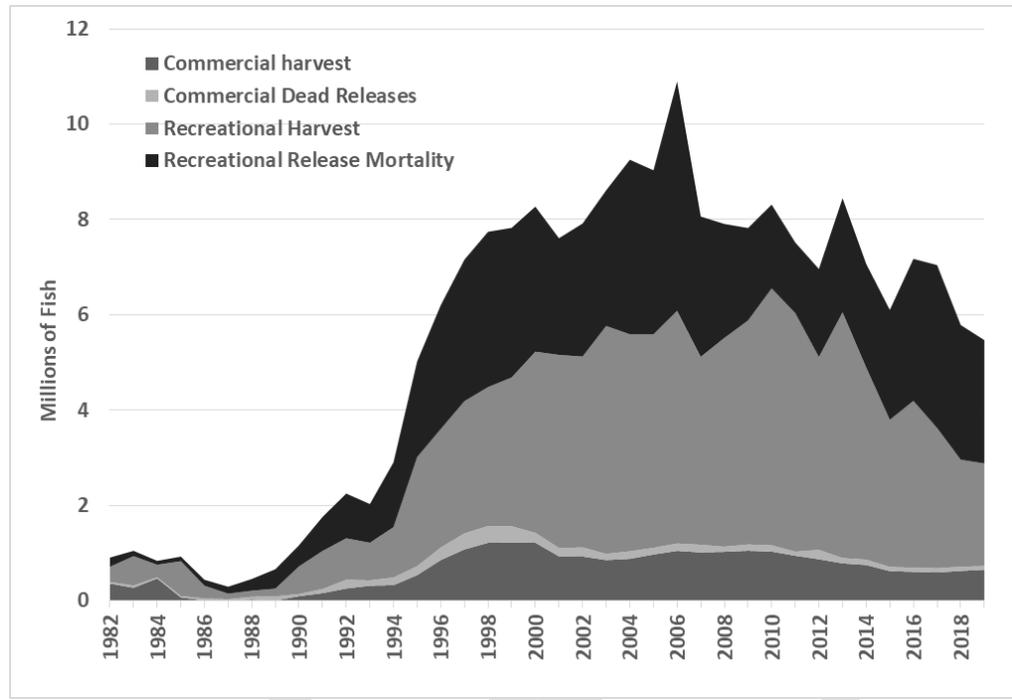


Figure 5. Total striped bass removals by sector in numbers of fish, 1982-2019. Note: Harvest is from ACCSP/MRIP, commercial discards and recreational release mortality is from ASMFC. Estimates exclude inshore harvest from A/R in North Carolina.

Statement of the Problem: Recreational release mortality constitutes such a large component of annual fishing mortality because the striped bass fishery is predominantly recreational and an overwhelming majority of the catch is released alive. The source of mortality does not matter to the health of the stock, as long as the overall fishing mortality is below the threshold. The current management program, which primarily uses bag limits and size limits to control harvest, is not designed to control the catch and release fishery which makes it difficult to control overall fishing mortality. Some stakeholders value the ability to harvest striped bass, either commercially or recreationally, while others value the experience of fishing for striped bass regardless of whether they are able to retain fish. The acceptable proportion of release mortality in total removals should reflect the management objectives for the fishery. Nonetheless, in order to better control all sources of fishing mortality, managers could consider additional gear restrictions to help increase the chance of survival after being released, or additional effort controls (i.e., time and area closures) to reduce the number of trips interacting with striped bass and thus the overall number of striped bass released alive.

Public Comment Questions: Should management focus on reducing the rate at which fish die after being released alive through additional gear restrictions similar to recent actions regarding the use of circle hooks (e.g., banning gaffing or the use

of treble hooks)? Should management focus on reducing effort in the fishery in order to reduce the total number of striped bass caught and released? **Should management consider seasonal closures when environmental conditions are unfavorable to striped bass survival when released?** What are some ways to improve awareness and stewardship of the resource?

ISSUE 8: **Recreational Accountability** Background: The striped bass resource currently supports commercial fisheries in eight jurisdictions and recreational fisheries in 14 jurisdictions along the Atlantic coast. The commercial fishery is regulated through Addendum VI with state-by-state commercial quota allocations and size limits (see Issue 9 on page 20 for more information about the striped bass commercial quota). Many jurisdictions have imposed additional management measures, including time and area closures, and gear restrictions, which are designed to control effort and the size of fish in the catch. Quotas are allocated to the states on an annual basis. If a state exceeds its quota in a given year, the state's quota is reduced by the amount of the overage the following year on a pound-for-pound basis. States are able to monitor the commercial quota closely throughout the year via landings and dealer reports which are typically required on a daily or weekly basis depending on the state. The state closes the fishery when its quota (or a percentage of the quota) is projected to be landed.

Unlike the commercial sector, the recreational striped bass fishery is not managed by a quota system; instead, the fishery is managed with size limits and bag limits (and with seasons in some states). As a result, recreational removals (combined harvest and release mortality) fluctuate from year-to-year with changes in angler effort and changes in the size, age structure, and distribution of the population throughout its range. Additionally, recreational catch and effort data are estimated in two-month intervals, called 'waves', via angler intercept and mail-based surveys administered by MRIP. These estimates are generally available six weeks after the end of a wave, which limits manager's ability to monitor the fishery during the season.

Some recreational fisheries, such as summer flounder and black sea bass, are managed by an annual recreational harvest limit (RHL) due to federal mandates. In the federal process, stock projections, estimates of release mortality, and management uncertainty are considered when setting the RHL for a species. Management measures (e.g., bag limits, size limits, and seasons) are implemented at the state, regional, or coastwide level, to collectively achieve the RHL. If the RHL is projected to be exceeded in a given year, the states may be required to adjust measures prior to that season to address potential for overharvest. Conversely, if recreational removals are projected to be less than the RHL, the states may be allowed to liberalize measures to fully utilize the RHL. While this approach allows for recreational accountability, it can also lead to frequent annual regulatory changes.

Statement of the Problem: The Atlantic Striped Bass FMP does not use an RHL or quota to manage the recreational fishery, which makes it difficult to evaluate whether removals from the sector are too high and to implement accountability measures. The use of RHLs is an effective way to implement accountability, however, recreational removals are inherently variable from year-to-year and MRIP data can have high levels of uncertainty (particularly at the state-level). Furthermore, a quota-based management approach conflicts with the stated objective of management stability for the fishery.

Public Comment Questions: Should the Board consider implementing an RHL for recreational striped bass management? How should an RHL overage or underage be addressed? Should stock status be considered when handling an RHL overage or underage? Are there additional accountability measures the Board should consider for managing the recreational striped bass fishery?

**ISSUE 9:
Coastal
Commercial
Quota
Allocation**

Background: Some species management boards (e.g. the Summer Flounder, Scup, and Black Sea Bass Board) are emphasizing the need to update commercial allocations to reflect recent catch and population distribution data. The Atlantic Striped Bass FMP uses a quota system to manage the commercial fishery. Each state from Maine to North Carolina is allocated a commercial quota in pounds of fish for harvest in the ocean region. A separate Chesapeake Bay commercial quota is allocated to Maryland, Virginia, and the Potomac River Fisheries Commission per the state/jurisdiction's mutual agreement. Quota overages are paid back the following season on a pound-for-pound basis, while the transfer of quota between states and rollover of unused quota from one year to the next is not permitted. Commercial harvest in the A/R is managed separately by the state of North Carolina with Commission oversight.

In general, the coastal commercial quota allocation is based on average landings during 1972-1979 and assuming a 28" minimum size limit. This historical base period was first used for management in 1989 when Amendment 4 required closed seasons in order to reduce commercial harvest to 20% of the base period. State-specific quotas were first implemented under Amendment 5 (1995) when the Commission declared the stock fully rebuilt; states were allocated 70% of their average landings during the 1972-1979 base period. Addendum III to Amendment 5 also granted producer-area status to the Delaware River and Bay, which allowed its commercial quota to be managed under a harvest-control model similar to that used in the Chesapeake Bay. Under Amendment 6 (2003), the quotas were increased to 100% of the base period, with some exceptions (see page 57 of [Amendment 6, Appendix 3](#) for details) and producer-areas were no longer used as a management tool. Of note, Delaware's quota was held at its last producer-area level under Amendment 6. The Amendment 6 quota allocations have since been reduced by 25% in 2015 (Addendum IV) and by an additional 18% in 2020

(Addendum VI) in response to declining stock status (Table 2). Throughout quota management, states have used CE to implement different commercial size limits resulting in changes to respective quota amounts.

Table 2. Changes in base quotas for Atlantic striped bass commercial fisheries by state and region since implementation of Amendment 6 in 2003. All quota amounts are in pounds.

State	Reference Period	Amendment 6		
	1972-1979 Average	Amend 6 † (2003)	Adden IV ° (2015)	Adden VI ^ (2020)
Maine	250	250	188	154
New Hampshire	5,750	5,750	4,313	3,537
Massachusetts	1,159,750	1,159,750	869,813	713,247
Rhode Island	243,625	243,625	182,719	148,889
Connecticut	23,750	23,750	17,813	14,607
New York	1,059,875	1,061,060	795,795	652,552
New Jersey	321,750	321,750	241,313	197,877
Delaware *	169,125	193,447	145,085	118,970
Maryland	131,560	131,560	98,670	74,396
Virginia	184,853	184,853	138,640	113,685
North Carolina	480,480	480,480	360,360	295,495
Maryland (Chesapeake Bay)		Set annually based on fishing mortality rate of F=0.27	3,120,247	2,588,603
PRFC (Chesapeake Bay)				
Virginia (Chesapeake Bay)				

*Quota combined for Delaware Bay and ocean region

†Beginning in 2003, quota reduced through CE for NY (892,293) and MD (126,396). Beginning in 2007, quota reduced through CE for RI (239,963)

°Addendum IV quota changed through CE for MD (90,727), RI (181,572), NJ (215,912)

^Addendum VI quota changed through CE MA (735,240), NY (640,718), NJ (215,912), DE (142,474), MD (ocean: 89,094; bay: 1,445,394), PRFC (572,861), VA (ocean: 125,034; bay: 983,393)

Under Amendment 5, the Chesapeake Bay quota was also based on average landings during the 1972-1979 base period, and split among the three jurisdictions based on their percent contribution to the 1994 harvest: Maryland = 52.359%, PRFC = 15.226%, and Virginia = 32.414%. Under Amendment 6, management in the Chesapeake Bay transitioned to a harvest control model where the commercial quota changed annually with exploitable biomass (Table 2). However, under Addendum IV the Chesapeake Bay quota was made static again and reduced to its 2012 harvest level minus 20.5%. Addendum VI further reduced the Chesapeake Bay commercial quota by 18%, although states pursued CE to lessen the impact of further cuts to the quota.

Unlike the commercial fishery in Chesapeake Bay, the ocean region regularly underutilizes the quota. The ocean quota underage is mainly attributed to designated game fish status in several states including Maine, New Hampshire, Connecticut, and New Jersey which collectively share about 10% of the commercial quota in the ocean region. Furthermore, the underage has increased in recent years since migratory striped bass have not been available to the ocean fishery in North Carolina resulting in zero harvest since 2012 (North Carolina holds 13% of the ocean quota) and raising questions about altered migratory pathways or preferred foraging areas as a result of climate change.

Statement of the Problem: For decades, the striped bass commercial quota allocation has been based on harvest data from the 1970s which may, or may not be an appropriate baseline. Harvester reporting during that time was not required and there is evidence that harvesters would sell fish in other states resulting in further inaccuracies in state estimates. No other ASMFC-managed species is managed with harvest data as old as that used for striped bass allocation. Additionally, the coastal commercial quota is not set annually based on changes in available biomass, but rather state-specific quotas are fixed in terms of pounds of fish until an assessment indicates removals need to be adjusted. Furthermore, within Chesapeake Bay there is an increasing disconnect from the 1970s base period over the years with the continued use of CE and other management actions that have occurred there.

Public Comment Questions: Should this Amendment address commercial allocation or be considered in a future management action? Is the 1972-1979 landings period still an appropriate baseline for the coastal commercial allocation? Should other allocation approaches be considered? Should the coastwide quota be explicitly set on an annual basis, or following an updated stock assessment or benchmark? Should regions with the necessary data be able to use a harvest control rule where commercial quotas are set annually based on exploitable biomass?

Background: The intent of this document is to solicit feedback on a broad range of issues for consideration in the next amendment for Atlantic striped bass.

**ISSUE 10:
Other Issues**

Stakeholder feedback should generally focus on **“How would you like management of the Atlantic striped bass fishery to look in the future?”**

After reading the above issues, are there any other topics that should be addressed in Amendment 7? Some examples may include:

- Impacts due to climate change, including possible loss of prey due to changing environmental conditions;
- Habitat degradation;
- Limited resources for law enforcement; and

- Research priorities

When providing comment on other management issues, it's important to indicate how the issue can be addressed through Board action.

**BACKGROUND
INFORMATION
ON THE MGMT
& STOCK
STATUS OF
ATLANTIC
STRIPED BASS**

Summary of Fishery Management

Atlantic striped bass (*Morone saxatilis*) have supported valuable commercial and recreational fisheries on the U.S. Atlantic coast for centuries. The Commission coordinates interstate management of the species in state waters (0-3 miles from shore), while management authority in the exclusive economic zone (3-200 miles) lies with NOAA Fisheries. The first Interstate FMP for the species was approved in 1981 in response to declining juvenile recruitment and depressed landings throughout the coast from Maine through North Carolina. The FMP and subsequent amendments and addenda focused on addressing the depleted spawning stock and recruitment failure. Despite these management efforts, the Atlantic striped bass stock continued to decline prompting many states (beginning with Maryland in 1985) to impose a complete harvest moratorium for several years until recruitment improved. State fisheries reopened in 1990 under Amendment 4 which aimed to rebuild the resource rather than maximize yield. The stock was ultimately declared rebuilt in 1995 and as a result, Amendment 5 to the Atlantic Striped Bass FMP was adopted which relaxed both recreational and commercial regulations along the coast.

The Atlantic striped bass fishery is currently managed through Amendment 6 to the FMP, which was implemented in 2003. Amendment 6 modified the BRPs, and established a list of management triggers based on the BRPs and juvenile recruitment. The coastal commercial quotas were restored to 100% of the states' average landings during the 1972-1979 historical base period at a 28" minimum size, with few exceptions (see Issue 9 on page 20). In the recreational fisheries, all states were required to implement a two-fish bag limit with a minimum size limit of 28 inches except for states with approved CE programs (see Issue 6 on page 15). The Chesapeake Bay and A/R regulatory programs were managed by a lower F target than the ocean region, which allowed these jurisdictions to implement separate seasons, harvest caps, and size and bag limits as long as they remain under that F target. No minimum size limit can be less than 18 inches under Amendment 6.

Five addenda to Amendment 6 have been implemented. Addendum I, approved in 2007, recommended research and angler education programs to address bycatch and release mortality. Addendum II, approved in 2010, modified the definition of recruitment failure so that each juvenile abundance index would have a fixed threshold for determining recruitment failure. Addendum III, approved in 2012,

requires all states with a commercial striped bass fishery to implement a uniform commercial harvest tagging program to improve compliance and enforcement.

Addendum IV, approved in 2014, established new coastwide F reference points as recommended by the 2013 benchmark, eliminated the separate F rates used to manage the Chesapeake Bay and A/R regions, and changed commercial and recreational measures to reduce F to the new F target. To achieve this, the Addendum implemented a 25% reduction to coastal commercial quotas, a 1-fish bag limit and 28" minimum size limit in recreational ocean fisheries (equivalent to a 25% reduction in removals), and 20.5% reductions in the Chesapeake Bay commercial and recreational fisheries. Addendum VI, approved in 2019 in response to the 2018 benchmark assessment, implemented additional 18% reductions to fishery removals to end overfishing and again try to reduce F to the target. This required an 18% reduction to all commercial quotas (ocean and Chesapeake Bay), a 1-fish bag limit and 28" to less than 35" slot limit for ocean recreational fisheries, and a 1-fish bag limit and 18" minimum size limit for Chesapeake Bay recreational fisheries beginning in 2020. For 2021, the addendum also requires mandatory use of circle hooks while recreationally fishing with bait. CE was employed by some states to implement alternative recreational or commercial measures from the Addendum IV and Addendum VI standards described above. There is no Addendum V; an action was initiated under this title in 2017 to consider liberalizing regulations, but the action was postponed and ultimately replaced by the development of Addendum VI.

The EEZ has been closed to the harvest, possession, and targeting of striped bass since 1990, with the exception of a defined route to and from Block Island in Rhode Island to allow for the transit of vessels in possession of striped bass legally harvested in adjacent state waters. In addition, an Executive Order issued in 2017 prohibits the sale of striped bass from the EEZ. In 2018, the Consolidated Appropriations Act directed NOAA Fisheries (in consultation with ASMFC) to review the federal moratorium once the 2018 benchmark was completed, and consider lifting the ban, however, there has not been any movement by NOAA on this directive as of late.

Summary of Stock Status

The 2018 Benchmark Stock Assessment for Atlantic striped bass is the latest and best information available on the status of the coastwide striped bass stock for use in fisheries management. The assessment was peer-reviewed at the 66th Northeast Regional Stock Assessment Review Committee (SARC) meeting in November 2018. The accepted assessment model is a forward projecting statistical catch-at-age (SCA) model which uses catch-at-age data and fishery-dependent and -independent survey indices to produce annual estimates of female SSB, F, and recruitment. Notably, the 2018 benchmark was the first assessment for striped bass to use the improved MRIP survey methods to estimate

recreational fishery catches. The new time series of recreational catch estimates is on average 2.3 times higher than the values used in previous stock assessments, resulting in higher estimates of stock size.

The reference points currently used for management are based on stock conditions in 1995, the year the stock was declared rebuilt (see Issue 2 on page 6). The biomass threshold is the level of SSB in 1995, the biomass target is 125% of the threshold, and the F threshold and target are the levels of F projected to achieve the biomass reference points over the long-term, respectively. The specific values of these reference points have been updated after each benchmark stock assessment based on the time series of SSB estimates.

The results of the 2018 benchmark indicate that the Atlantic striped bass stock is overfished and overfishing is occurring. Female SSB in 2017 was estimated at 68,576 metric tons (151 million pounds), which is below the SSB threshold of 91,436 metric tons (202 million pounds) (Figure 3). Female SSB peaked in 2003 and has been declining since then; SSB has been below the threshold level since 2013. Total F in 2017 was estimated at 0.31, which is above the F threshold of 0.24 (Figure 2). Total F has been at or above the threshold in 13 of the last 15 years of the assessment (2003-2017). Striped bass experienced a period of lower recruitment from 2005-2011 (Figure 3) which contributed to the steep decline in SSB that the stock has experienced since 2010. Recruitment was high in 2012, 2015, and 2016 (corresponding to strong 2011, 2014, and 2015 year classes), but estimates of age-1 striped bass were below average in 2013, 2014, and 2017.

Ecological Reference Points

In August 2020, the Atlantic Menhaden Management Board approved the use of ecological reference points (ERP) for menhaden management. The ERP assessment uses the Northwest Atlantic Coastal Shelf Model of Intermediate Complexity for Ecosystems (NWACS-MICE) to develop Atlantic menhaden ERPs that account for Atlantic menhaden's role as a forage fish. NWACS-MICE is an ecosystem model that focuses on four key predator species (striped bass, bluefish, weakfish, and spiny dogfish) and three key prey species (Atlantic menhaden, Atlantic herring, and bay anchovy). These species were chosen because diet data indicate they are top predators of Atlantic menhaden or are key alternate prey species for those predators. The tool allows managers to evaluate the tradeoffs between Atlantic menhaden harvest and predator abundance to set reference points that take into account menhaden's role as a forage fish. ERPs for the management of Atlantic menhaden are as follows:

ERP target: The maximum fishing mortality rate (F) on Atlantic menhaden that sustains Atlantic striped bass at their biomass target when striped bass are fished at their F target

ERP threshold: The maximum F on Atlantic menhaden that keeps Atlantic striped bass at their biomass threshold when striped bass are fished at their F target.

Atlantic striped bass is the focal species for the ERP definitions because it is the most sensitive predator fish species to Atlantic menhaden harvest in the model, so an ERP target and threshold that sustained striped bass would likely provide sufficient forage for other predators under current ecosystem conditions.

Summary of the Fishery

The Atlantic striped bass fishery is predominantly recreational with the sector accounting for 88% of total harvest by weight since 2005 and 82% in terms of numbers of fish (Table 3 and Table 4). In 2019, total removals (commercial and recreational combined, including harvest and dead releases) was estimated at 5.47 million fish; the recreational sector accounted for 87% of total removals by number.

Commercial Fishery

The commercial fishery is managed via a quota system resulting in relatively stable landings since implementation of Amendment 6 in 2003 (see Issue 9 on page X). From 2004 to 2014, coastwide commercial harvest averaged 6.8 million pounds (1 million fish) annually (Table 3 and Table 4). From 2015-2019, commercial landings decreased to an average of 4.7 million pounds (619,279 fish) due to implementation of Addendum IV and a reduction in the commercial quota. Commercial discards are estimated to account for <2% of total removals per year since 2004 (Table 3 and Table 4).

There are two sets of quota allocations; one to all states (Maine through North Carolina, excluding Pennsylvania) for harvest in the ocean, and a second allocation to Maryland, PRFC, and Virginia for harvest in Chesapeake Bay. Although the regional allocations are about equal, the majority of commercial harvest comes from Chesapeake Bay; roughly 60% by weight and 80% in numbers of fish since 1990. The differences between landings in weight and in numbers of fish is primarily attributed to the availability of smaller fish and lower size limits in Chesapeake Bay relative to the ocean fishery. Additionally, the ocean fishery tends to underutilize its allocations due to lack of availability in state waters (particularly off of North Carolina) and designated game fish status in some states (Maine, New Hampshire, Connecticut and New Jersey).

Recreational Fishery

The recreational fishery is managed via bag and size limits and therefore recreational catch and harvest vary from year to year with changes in angler effort and the size and availability of fish. From 2004-2014, recreational harvest averaged 54.8 million pounds (4.6 million fish) annually (Table 3 and Table 4).

From 2015-2019, recreational harvest averaged 33.6 million pounds (2.8 million fish) in part due to declining biomass and implementation of Addendum IV.

The vast majority of recreational striped bass catch is released alive either due to angler preference or regulation; roughly 90% annually since 1990. Based on peer reviewed literature, a 9% release mortality rate is used to estimate the number of fish that die as a consequence of being caught and released. Despite this low rate, the popularity of striped bass as a targeted recreational species means that catch and release fishing contributes a significant source of mortality to the stock each year. In 2019, recreational anglers caught and released an estimated 28.8 million fish, of which 2.60 million are assumed to have died which represents 47% of total striped bass removals in 2019 (Table 3).

A large proportion of recreational harvest comes from Chesapeake Bay. From 2004-2014, 33% of recreational harvest in numbers of fish came from Chesapeake Bay. From 2015-2018, that percentage increased to 45%, likely as a result of the strong 2011, 2014, and 2015 year classes moving through the fishery. The majority of recreational harvest in the ocean fishery comes from Massachusetts, New York, and New Jersey.

References

- Diodati, P.J. and R.A. Richards. 1996. Mortality of Striped Bass Hooked and Released in Salt Water. *Transactions of the American Fisheries Society* 125:300-307.
- Northeast Fisheries Science Center (NEFSC). 2018a. 66th Northeast Regional Stock Assessment Workshop (66th SAW) Assessment Report. US Dept Commer. Northeast Fish Sci Cent Ref Doc. 19-08; 719 p.
- Northeast Fisheries Science Center (NEFSC). 2018b. 66th Northeast Regional Stock Assessment Workshop (66th SAW) Assessment Summary Report. US Dept Commer. Northeast Fish Sci Cent Ref Doc. 19-01; 45 p.

Tables

Table 3. Total striped bass removals (harvest plus release mortality) by sector in numbers of fish, 1990-2019. Note: Harvest is from ACCSP/MRIP, release mortality is from ASMFC. Estimates exclude inshore harvest from North Carolina.

Year	Commercial		Recreational		Total Removals
	Harvest	Release Mortality	Harvest	Release Mortality	
1990	93,888	46,912	578,897	442,811	1,162,508
1991	158,491	88,486	798,260	715,478	1,760,714
1992	256,476	184,638	869,779	937,611	2,248,505
1993	314,483	113,410	789,037	812,404	2,029,333
1994	325,401	162,970	1,055,523	1,360,872	2,904,765
1995	537,412	189,819	2,287,578	2,010,689	5,025,498
1996	854,094	263,510	2,487,422	2,600,526	6,205,552
1997	1,076,460	337,085	2,774,981	2,969,781	7,158,307
1998	1,215,219	353,224	2,915,390	3,259,133	7,742,966
1999	1,223,572	339,103	3,123,496	3,140,905	7,827,075
2000	1,216,812	208,415	3,802,477	3,044,203	8,271,906
2001	931,412	175,656	4,052,474	2,449,599	7,609,141
2002	928,085	191,561	4,005,084	2,792,200	7,916,931
2003	854,326	130,646	4,781,402	2,848,445	8,614,819
2004	879,768	158,311	4,553,027	3,665,234	9,256,339
2005	970,403	141,415	4,480,802	3,441,928	9,034,549
2006	1,047,648	153,276	4,883,961	4,812,332	10,897,218
2007	1,015,226	159,830	3,944,679	2,944,253	8,063,988
2008	1,027,837	107,778	4,381,186	2,391,200	7,908,000
2009	1,049,959	130,819	4,700,222	1,942,061	7,823,061
2010	1,031,430	133,970	5,388,440	1,760,759	8,314,599
2011	944,777	85,848	5,006,358	1,482,029	7,519,013
2012	870,606	197,412	4,046,299	1,847,880	6,962,196
2013	784,379	111,580	5,157,760	2,393,425	8,447,144
2014	750,263	113,080	4,033,746	2,172,342	7,069,431
2015	621,952	88,497	3,085,725	2,307,133	6,103,307
2016	606,087	87,827	3,500,434	2,981,430	7,175,777
2017	592,670	91,338	2,939,777	3,420,645	7,044,430
2018	625,177	90,092	2,244,766	2,826,667	5,786,702
2019	650,511	78,990	2,150,935	2,589,045	5,469,481

Table 4. Total recreational and commercial striped bass harvest by sector in pounds and numbers of fish, 1990-2019. Note: Harvest is from ACCSP/MRIP. Estimates exclude inshore harvest from North Carolina.

Year	Numbers of Fish			Pounds		
	Commercial	Recreational	Total	Commercial	Recreational	Total
1990	93,888	578,897	672,785	715,902	8,207,515	8,923,417
1991	158,491	798,260	956,751	966,096	10,640,601	11,606,697
1992	256,476	869,779	1,126,255	1,508,064	11,921,967	13,430,031
1993	314,483	789,037	1,103,520	1,800,176	10,163,767	11,963,943
1994	325,401	1,055,523	1,380,924	1,877,197	14,737,911	16,615,108
1995	537,412	2,287,578	2,824,990	3,775,586	27,072,321	30,847,907
1996	854,094	2,487,422	3,341,516	4,822,874	28,625,685	33,448,559
1997	1,076,460	2,774,981	3,851,441	6,077,751	30,616,093	36,693,844
1998	1,215,219	2,915,390	4,130,609	6,552,111	29,603,199	36,155,310
1999	1,223,572	3,123,496	4,347,068	6,474,290	33,564,988	40,039,278
2000	1,216,812	3,802,477	5,019,289	6,719,521	34,050,817	40,770,338
2001	931,412	4,052,474	4,983,886	6,266,769	39,263,154	45,529,923
2002	928,085	4,005,084	4,933,169	6,138,180	41,840,025	47,978,205
2003	854,326	4,781,402	5,635,728	6,750,491	54,091,836	60,842,327
2004	879,768	4,553,027	5,432,795	7,317,897	53,031,074	60,348,971
2005	970,403	4,480,802	5,451,205	7,121,492	57,421,174	64,542,666
2006	1,047,648	4,883,961	5,931,609	6,568,970	50,674,431	57,243,401
2007	1,015,226	3,944,679	4,959,905	7,047,179	42,823,614	49,870,793
2008	1,027,837	4,381,186	5,409,023	7,190,701	56,665,318	63,856,019
2009	1,049,959	4,700,222	5,750,181	7,216,792	54,411,389	61,628,181
2010	1,031,430	5,388,440	6,419,870	6,996,713	61,431,360	68,428,073
2011	944,777	5,006,358	5,951,135	6,789,792	59,592,092	66,381,884
2012	870,606	4,046,299	4,916,905	6,516,868	53,256,619	59,773,487
2013	784,379	5,157,760	5,942,139	5,819,678	65,057,289	70,876,967
2014	750,263	4,033,746	4,784,009	5,937,949	47,948,610	53,886,559
2015	621,952	3,085,725	3,707,677	4,829,997	39,898,799	44,728,796
2016	606,087	3,500,434	4,106,521	4,831,442	43,671,532	48,502,974
2017	592,670	2,939,777	3,532,447	4,816,395	37,961,037	42,777,432
2018	625,177	2,244,766	2,869,943	4,770,463	23,069,028	27,839,491
2019	650,511	2,150,935	2,801,446	4,199,502	23,556,287	27,755,789



Atlantic States Marine Fisheries Commission

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MEMORANDUM

January 12, 2021

To: Atlantic Striped Bass Management Board

From: Tina Berger, Director of Communications

RE: Advisory Panel Nominations

Please find attached three new nominations to the Atlantic Striped Bass Advisory Panel – Andrew Dangelo, with the RI for-hire industry; Michael Plaia, a RI commercial fisherman, recreational angler and for-hire operator; and Dennis Fleming, a commercial fisherman and recreational fishing guide representing the Potomac River Fisheries Commission. Please review these nominations for action at the next Board meeting.

If you have any questions, please feel free to contact me at (703) 842-0749 or tberger@asmfc.org.

Enc.

cc: Emilie Franke

M21-06

ATLANTIC STRIPED BASS ADVISORY PANEL

Bolded names await approval by the Atlantic Striped Bass Management Board

January 14, 2021

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Appt Reconfirmed 5/10

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Appt. Confirmed 2/18/20

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Appt Reconfirmed 5/10

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Appt. Reconfirmed 8/18

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Appt. Reconfirmed 2/9/06; 5/17/10; 4/14/14

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4637 Willowgrove Drive
Ellicot City, MD 21042
Phone: (443) 621-9186
FAX: (410) 772-5805
Davidsikorski@mac.com
Appt Confirmed 3/23/11

Virginia

Kelly Place (comm)
213 Waller Mill Road
Williamsburg, VA 23185

Phone (h): (757) 220-8801
Phone (c): (757) 897-1009
FAX: (757) 259-9669
kelltron@aol.com
Appt. Confirmed 5/23/02
Appt Reconfirmed 5/06 and 5/10

William Edward Hall Jr. (rec)
PO Box 235
26367 Shoremain Drive
Bloxom, VA 23308
Phone (day): (757)854-1519
Phone (eve): (757)894-0416
FAX: (757)854-0698
esangler@verizon.net
Appt. Confirmed 5/13/14

North Carolina

Riley W. Williams (com)
336 Selwin Road
Belvidere, NC 27919
Phone: (252) 312-8457
Appt. Confirmed 11/10/04
Appt Reconfirmed 11/08; 8/18

Bill Gorham (rec)
25 12th Avenue
Southern Shores, NC 27949
Phone: 703.919.0886
Getbowedup40@gmail.com
Appt. Confirmed 2/18/20

District of Columbia

Joe Fletcher (rec)
1445 Pathfinder Lane
McLean, VA 22101
Phone: (703) 356-9106
Email: jmfletcher@verizon.net
Appt. Confirmed 10/30/95
Appt. Reconfirmed 9/15/99; 9/03 and 9/07

Potomac Fisheries River Comm.

Dennis Fleming (comm/for-hire)
P.O. Box 283
Newburg, MD 20664
Phone: 240.538.1260
captaindennisf@gmail.com



ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (All Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2). In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.**

Form submitted by: _____ State: _____
(your name)

Name of Nominee: Andrew J. Dangelo

Address: 1035 Liberty Lane

City, State, Zip: W. Kingston RI 02892

Please provide the appropriate numbers where the nominee can be reached:

Phone (day): 401 7886012 Phone (evening): 7886012 (4a)

FAX: _____ Email: maridee2@gmail.com

FOR ALL NOMINEES:

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.

1. Striped Bass
2. _____
3. _____
4. _____

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?

yes _____ no

3. Is the nominee a member of any fishermen's organizations or clubs?

yes no _____

If "yes," please list them below by name.

RI Party and Charterboat Assoc. → Treasurer
RI marine Fisheries Council

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

All species of blackfish striped bass
finfish - turn sharks porgies bonita codfish
bluefish sea bass

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

Same as above

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business? _____ years
2. Is the nominee employed only in commercial fishing? yes _____ no _____
3. What is the predominant gear type used by the nominee? _____
4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)? _____

FOR CHARTER/HEADBOAT CAPTAINS:

1. How long has the nominee been employed in the charter/headboat business? 51 years
2. Is the nominee employed only in the charter/headboat industry? yes no _____
If "no," please list other type(s) of business(es) and/occupation(s): _____

3. How many years has the nominee lived in the home port community? 51 years
If less than five years, please indicate the nominee's previous home port community.

FOR RECREATIONAL FISHERMEN:

1. How long has the nominee engaged in recreational fishing? 51+ years
2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? yes no

If "yes," please explain.

operate Maridree inc. - a sportfishing charter
business since 1982

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing? _____ years
2. Is the nominee employed only in the business of seafood processing/dealing?
yes _____ no _____ If "no," please list other type(s) of business(es) and/or occupation(s):

3. How many years has the nominee lived in the home port community? _____ years
If less than five years, please indicate the nominee's previous home port community.

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? _____ years
2. Is the nominee employed in the fishing business or the field of fisheries management?
yes _____ no _____

If "no," please list other type(s) of business(es) and/or occupation(s):

FOR ALL NOMINEES:

In the space provided below, please provide the Commission with any additional information which you feel would assist us in making choosing new Advisors. You may use as many pages as needed.

Nominee Signature: 

Date: 11/15/20

Name: Andrew J. D'Angelo
(please print)

COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)

State Director

State Legislator

Governor's Appointee



ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (All Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2). In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.**

Form submitted by: Michael C. Plaia State: RI
(your name)

Name of Nominee: Michael C. Plaia
119 Currituck Road
Address: _____
Newtown, CT 06470
City, State, Zip: _____

Please provide the appropriate numbers where the nominee can be reached:
Phone (day): 203-512-4280 Phone (evening): 203-512-4280
FAX: _____ Email: mkomike3333@yahoo.com

.....
FOR ALL NOMINEES:

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.
Striped bass
1. _____
2. _____
3. _____
4. _____
2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?
yes _____ no _____
3. Is the nominee a member of any fishermen's organizations or clubs?
X
yes _____ no _____

If "yes," please list them below by name.

FOR RECREATIONAL FISHERMEN:

1. How long has the nominee engaged in recreational fishing? 70 years
2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? yes X no _____

If "yes," please explain.

Licensed 6 pack charter captain, licensed commercial fisherman

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing? 50 years
2. Is the nominee employed only in the business of seafood processing/dealing?
yes _____ no _____ If "no," please list other type(s) of business(es) and/or occupation(s):

3. How many years has the nominee lived in the home port community? _____ years
If less than five years, please indicate the nominee's previous home port community.

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? 20 years
2. Is the nominee employed in the fishing business or the field of fisheries management?
yes X no _____

If "no," please list other type(s) of business(es) and/or occupation(s):

FOR ALL NOMINEES:

In the space provided below, please provide the Commission with any additional information which you feel would assist us in making choosing new Advisors. You may use as many pages as needed.

Currently an advisor to both the ASMFC and MAFMC for summer flounder, scup and black sea bass. Currently an advisor to the NEFMC on the recreational advisory Panel. Been doing both for over ten years.

Nominee Signature: Michael C. Plaia

Date:

Michael C. Plaia

Name: _____
(please print)

COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)

State Director

State Legislator

Governor's Appointee



ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (All Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2).** In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.

Form submitted by: Dennis Fleming State: Maryland
(your name)

Name of Nominee: Dennis Fleming

Address: P.O. Box 283

City, State, Zip: Newburg, MD 20664

Please provide the appropriate numbers where the nominee can be reached:

Phone (day): 240-538-1260

Phone (evening): 240-538-1260

FAX: _____

Email: captaindennisf@gmail.com

FOR ALL NOMINEES:

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.

1. Striped Bass Advisory Panel
2. _____
3. _____
4. _____

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?

yes _____ no X

3. Is the nominee a member of any fishermen's organizations or clubs?

yes X no _____

If "yes," please list them below by name.

Southern MD Recreational Fishing Org.

Coastal Conservation Association

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

N/A

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

N/A

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business? 13 years
2. Is the nominee employed only in commercial fishing? yes _____ no _____
3. What is the predominant gear type used by the nominee? _____
4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)? _____

FOR CHARTER/HEADBOAT CAPTAINS:

1. How long has the nominee been employed in the charter/headboat business? 13 years
2. Is the nominee employed only in the charter/headboat industry? yes _____ no X

If "no," please list other type(s) of business(es) and/occupation(s): _____

Property Management

3. How many years has the nominee lived in the home port community? 1 years

If less than five years, please indicate the nominee's previous home port community.

Mechanicsville, MD

FOR RECREATIONAL FISHERMEN:

1. How long has the nominee engaged in recreational fishing? _____ years
2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? yes _____ no

If "yes," please explain.

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing?
¹³ _____ years
2. Is the nominee employed only in the business of seafood processing/dealing?
yes _____ no _____ If "no," please list other type(s) of business(es) and/or occupation(s):

3. How many years has the nominee lived in the home port community? _____ years
If less than five years, please indicate the nominee's previous home port community.

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? ¹⁵ _____ years
2. Is the nominee employed in the fishing business or the field of fisheries management?
yes _____ no

If "no," please list other type(s) of business(es) and/or occupation(s):

FOR ALL NOMINEES:

Atlantic States Marine Fisheries Commission

Shad and River Herring Management Board

February 4, 2021

8:30 – 11:30 a.m.

Webinar

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order (*M. Armstrong*) 8:30 a.m.
2. Board Consent 8:30 a.m.
 - Approval of Agenda
 - Approval of Proceedings from August 2020
3. Public Comment 8:35 a.m.
4. Consider Management Response to the 2020 Shad Benchmark Assessment and Peer Review (*M. Armstrong*) 8:45 a.m.
 - Review Technical Committee Recommendations (*B. Neilan*)
 - Advisory Panel Report (*P. Lyons Gromen*)
5. Review Technical Committee Recommendations on Improvements to Amendments 2 and 3 (*B. Neilan*) **Possible Action** 9:30 a.m.
6. Break 10:30 a.m.
7. Consider Shad Habitat Plan Updates **Action** 10:45 a.m.
 - Review Technical Committee Recommendations (*B. Neilan*)
8. Consider Fishery Management Plan Review and State Compliance for the 2019 Fishing Year (*C. Starks*) **Action** 11:10 a.m.
9. Review and Populate Advisory Panel Membership (*T. Berger*) **Action** 11:25 a.m.
10. Other Business/Adjourn 11:30 a.m.

MEETING OVERVIEW

Shad and River Herring Management Board

February 4, 2021

8:30 a.m. – 11:30 a.m.

Webinar

Chair: Mike Armstrong (MA) Assumed Chairmanship: 10/19	Technical Committee Chair: Brian Neilan (NJ)	Law Enforcement Committee Representative: L.Furlong (PA)
Vice Chair: Justin Davis	Advisory Panel Chair: Pam Lyons Gromen	Previous Board Meeting: August 4, 2020
Voting Members: ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, DC, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (19 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from August 2020

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time must sign-in at the beginning of the meeting. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance the Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Consider Management Response to the 2020 American Shad Benchmark Stock Assessment (8:45-9:30 a.m.)

Background

- The [American Shad 2020 Benchmark Stock Assessment and Peer Review Report](#) was accepted for management use in August 2020. The assessment found that American shad remain depleted on a coastwide basis, likely due to multiple factors, such as fishing mortality, inadequate fish passage at dams, predation, pollution, habitat degradation, and climate change.
- At the August 2020 meeting, the Board tasked the Technical Committee (TC) with identifying potential paths forward to improve shad stocks given the results of the stock assessment. The TC met several times in the fall of 2020 and early 2021 to develop recommendations to address the Board Task (**Briefing Materials**).
- The Advisory Panel met twice to consider the recommendations of the TC and provide additional input for Board consideration (**Supplemental Materials**).

Presentations

- Technical Committee Recommendations by B. Neilan
- Advisory Panel Report by P. Lyons Gromen

Board actions for consideration at this meeting

- Consider management response to the assessment and peer review

5. Review Technical Committee Recommendations on Improvements to Amendments 2 and 3 (9:30-10:30 a.m.) Possible Action

Background

- In October 2017 the TC identified several inconsistencies between state SFMPs and the requirements of Amendments 2 and 3. Subsequently, the Board tasked the TC to develop proposed improvements to the Amendments with regard to several items: 1) Management and monitoring of rivers with low abundance and harvest of shad and river herring; 2) Standardization of Sustainable Fishery Management Plan (SFMP) requirements; 3) Incorporation of stock assessment information into SFMPs and discussion on the timeline for renewing plans; 4) Clarification of *de minimis* requirements as they pertain to SFMPs; and 5) Review of the number of years of data required before developing a SFMP.
- The Technical Committee met a number of times throughout 2020 to develop and finalize a list of recommendations to address each of the focus areas identified in the Board task (**Briefing Materials**).

Presentations

- Technical Committee Recommendations on Improvements to Amendments 2 and 3 by B. Neilan

Board actions for consideration at this meeting

- Consider initiating a management action to address the TC recommendations

6. Break (10:30-10:45 p.m.)

7. Consider Shad Habitat Plan Updates (10:45-11:10 a.m.) Action

Background

- Amendment 3 to the Shad and River Herring FMP requires all states and jurisdictions to submit a habitat plan for American shad. A majority of the habitat plans were approved by the Board in February 2014, and it was anticipated that they would be updated every five years.
- The states began the process of reviewing their American shad habitat plans and making updates in 2020, however, many states encountered delays due to COVID-19. The states that have submitted updated habitat plans for Board consideration are: ME, NH, MD, NC SC, and GA (**Briefing Materials**). The remaining states will provide their updated plans to the TC for review before the next Board meeting.
- The TC reviewed and recommends approval of these updated plans.

Presentations

- Shad Habitat Plan Updates for Board Consideration by B. Neilan

Board actions for consideration at this meeting

- Consider approval of updated shad habitat plans

8. Consider Fishery Management Plan Review and State Compliance for the 2019 Fishing Year (11:10-11:25 a.m.) Action

Background

- State Compliance Reports were due on July 1, 2019
- The Plan Review Team reviewed each state report and compiled the annual FMP Review (**Briefing Materials**).

<p>Presentations</p> <ul style="list-style-type: none"> • Overview of the FMP Review Report by C. Starks
<p>Board actions for consideration at this meeting</p> <ul style="list-style-type: none"> • Approve FMP Review for 2019 fishing year, state compliance reports, and <i>de minimis</i> requests

<p>9. Review and Populate Advisory Panel Membership (11:25-11:30 a.m.) Action</p>
<p>Background</p> <ul style="list-style-type: none"> • Two individuals have been nominated to the Shad and River Herring Advisory Panel: Dr. Ed Hale of University of Delaware Sea Grant, and Eric Roach, a recreational angler from New Hampshire (Briefing Materials).
<p>Presentations</p> <ul style="list-style-type: none"> • Nominations by T. Berger
<p>Board Actions for Consideration at the Meeting</p> <ul style="list-style-type: none"> • Approve Shad and River Herring Advisory Panel nominations

10. Other Business/Adjourn

Shad and River Herring 2021 TC Tasks

Activity level: Medium

Committee Overlap Score: Medium (Multi-species committees for this Board)

Committee Task List

- Development of recommendations related to Board task on improving shad stocks
- Spring 2020: Updates to state Shad Habitat Plans
- Annual state compliance reports due July 1

TC Members: Mike Brown (ME), Mike Dionne (NH), Brad Chase (MA), Patrick McGee (RI), Jacque Benway Roberts (CT), Wes Eakin (Vice Chair, NY), Brian Neilan (Chair, NJ), Josh Tryniewski (PA), Johnny Moore (DE), Rob Bourdon (MD), Ellen Cosby (PRFC), Joseph Swann (DC), Eric Hilton (VA), Holly White (NC), Jeremy McCargo (NC), Bill Post (SC), Jim Page (GA), Reid Hyle (FL), Ken Sprankle (USFWS), Ruth Hass-Castro (NOAA)

Shad SAS: Michael Bailey (Chair, USFWS), Ken Sprankle (TC Chair, USFWS-CT), Joey Ballenger (SC), Mike Bednarski (VA), Wes Eakin (NY), Kevin Sullivan (NH), Joe Zydlewski (USGS), Jacque Benway-Roberts (CT), Kiersten Curti (NOAA-Fisheries), Angela Giuliano (MD), Jason Boucher (DE)

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
SHAD AND RIVER HERRING MANAGEMENT BOARD**

**Webinar
August 4, 2020**

These minutes are draft and subject to approval by Shad and River Herring Management Board.
The Board will review the minutes during its next meeting.

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INDEX OF MOTIONS

1. **Approval of Agenda** by Consent (Page 1).
2. **Approval of Proceedings of October 2019** by Consent (Page 1).
3. **Move to accept the 2020 American Shad Benchmark Stock Assessment and Peer Review Report for management use** (Page 27). Motion by Pat Keliher; second by Cheri Patterson. Motion carried (Page 27).
4. **Move to task the Technical Committee with identifying for the Board potential paths forward to improve shad stocks given the results of the stock assessment** (Page 28). Motion by Pat Keliher; second by Emerson Hasbrouck. Motion carried (Page 30).
5. **Move to approve the state proposals for shad and river herring management as presented today** (Page 38). Motion by Lynn Fegley; second by Spud. Woodward. Motion carried (Page 39).
6. **Move to approve New Hampshire's request for an exemption from their River Herring SFMP requirement to close the fishery in 2020 based on data indicating that passage counts for the most recent three-year average did not meet the sustainability target of 72,450 fish. This exemption is based on explanatory information supporting the claim that passage counts are low due to equipment failure and other variables, rather than true fish passage numbers** (Page 39). Motion by Cheri Patterson; second by Roy Miller. Motion carried (Page 40).
7. **Move to elect Justin Davis as Vice Chair of the Shad and River Herring Management Board** (Page 42). Motion by Raymond Kane; second by Dennis Abbott. Motion carried (Page 43).
8. **Motion to adjourn** by Consent (Page 43).

ATTENDANCE

Board Members

Megan Ware, ME, proxy for P. Keliher (AA)
Sen. David Miramant, ME (LA)
Cheri Patterson, NH (AA)
Ritchie White, NH (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Mike Armstrong, MA, (Chair)
Raymond Kane, MA (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)
Phil Edwards, RI
Eric Reid, RI, proxy for Rep. Sosnowski (LA)
Justin Davis, CT (AA)
Bill Hyatt, CT (GA)
Robert LaFrance, CT, Governor Appointee proxy
Maureen Davidson, NY, proxy for J. Gilmore (AA)
Emerson Hasbrouck, NY (GA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Joe Cimino, NJ (AA)
Heather Corbett, NJ, Administrative proxy
Tom Fote, NJ (GA)
Adam Nowalsky, NJ, Legislative proxy (Chair)
Kris Kuhn, PA, proxy for T. Schaeffer (AA)
Loren Lustig, PA (GA)

G. Warren Elliott, PA (LA)
John Clark, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Lynn Fegley, MD, proxy for B. Anderson (AA)
Russell Dize, MD (GA)
Allison Colden, MD, proxy for Del. Stein (LA)
Pat Geer, VA, proxy for S. Bowman (AA)
Chris Batsavage, NC, proxy for S. Murphey (AA)
Mel Bell, SC, proxy for P. Maier
Malcolm Rhodes, SC (GA)
Ross Self, SC, proxy for Sen. Cromer (LA)
Doug Haymans, GA (AA)
Spud Woodward, GA (GA)
Jim Estes, FL, proxy for J. McCawley (AA)
Rep. Thad Altman, FL (LA)
Marty Gary, PRFC
Bryan King, DC
Dan Ryan, DC, proxy
Derek Orner, NMFS
Sherry White, US FWS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Ken Sprankle, Technical Committee Chair
Mike Bailey, Stock Assessment Subcommittee Chair

Pam Lyons Gromen, Advisory Panel Chair

Staff

Bob Beal
Toni Kerns
Caitlin Starks
Maya Drzewicki
Kristen Anstead
Max Appelman
Tina Berger
Pat Campfield

Lisa Havel
Chris Jacobs
Jeff Kipp
Sarah Murry
Kirby Rootes-Murdy
Mike Schmidtke
Geoff White

Guests

Fred Akers
Seth Amgott
Bill Anderson, MD (AA)
Pat Augustine, Coram, NY
Michael Auriemma, NJ DEP
Joey Ballenger, SC DNR
Carolyn Belcher, GA DNR

Peter Benoit, Ofc. of Sen. King, ME
Jacque Benway, CT DEP
Dave Bethoney, CFR Foundation
Alan Bianchi, NC DNR
Jason Boucher, DE DFW
Rob Bourdon, MD DNR
Jeff Brust, NJ DFW

These minutes are draft and subject to approval by the Shad and River Herring Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the Shad and River Herring Board Meeting Webinar
August 2020

Guests (continued)

Twyla Cheatwood, NOAA	Alexa Kretsch, VMRC
Benson Chiles, Chiles Consulting	Phil Langley, Dameron, MD
Doug Christel, NOAA	Chip Lynch, NOAA
Jeremy Cox, <i>Bay Journal</i>	John Maniscalco, NYS DEC
Sen. Ronnie Cromer, SC (LA)	Genine McClair, MD DNR
Jim Cummins, ICPRB	Jason McNamee, RI (AA)
Curtis Dalpra, ICPRB	Steve Meyers
Jeff Deem, Lorton, VA	Mike Millard, US FWS
Mari-Beth DeLucia, TNC	Chris Moore, MAFMC
Lyndon DeSalvo, TNC	David Mussina
Wes Eakin, NYS DEC	Brian Neilan, NJ DFW
Sheila Eyler, US FWS	Ken Neill, Yorktown, VA
Jared Flowers, GA DNR	George O'Donnell, MD DNR
Matt Gates, CT DEEP	Ian Park DE DFW
Shaun Gehen, Gehan Law	Nicholas Popoff, US FWS
Emily Gilbert, NOAA	Bill Post, SC DNR
Lewis Gillingham, VMRC	Alexei Sharov, MD DNR
Angela Giuliano, MD DNR	Melissa Smith, ME DNR
Zoe Goozner, Pew Trusts	Gregory Sorg, SC DNR
Zack Greenberg, Pew Trusts	David Stormer, DE DFW
Jon Hare, NOAA	Kevin Sullivan, NH F&G
Carol Hoffman, NYS DEC	John Sweka, US FWS
Kyle Hoffman, SC DNR	Helen Takada-Heumacher, FL FWS
George Jackman	Hannah Welch, UNE
Rusty Hudson	Holly White, NC DENR
Desmond Kahn	Chris Wright, NOAA
Patrick Keliher, ME (AA)	

These minutes are draft and subject to approval by the Shad and River Herring Management Board.
The Board will review the minutes during its next meeting.

The Shad and River Herring Management Board of the Atlantic States Marine Fisheries Commission convened via webinar; Tuesday, August 4, 2020, and was called to order at 8:30 a.m. by Chairman Michael Armstrong.

CALL TO ORDER

CHAIRMAN MICHAEL ARMSTRONG: Good morning everyone. I would like to open the Atlantic States Shad and River Herring Management Board. I'm Mike Armstrong from the Commonwealth of Massachusetts, your Chair. We've got a few things to cover today, the main ones being the review of the benchmark shad assessment and considering state proposals to resolve inconsistencies.

APPROVAL OF AGENDA

CHAIRMAN ARMSTRONG: We have a decent length of time, so I think we can probably get through all this stuff without killing ourselves. But we'll move right along. You all have a copy of the agenda. Are there any changes, additions that anyone would like to see? Are there any hands, Toni?

MS. TONI KERNS: No hands.

CHAIRMAN ARMSTRONG: All right, seeing none, the agenda is approved by consensus.

APPROVAL OF PROCEEDINGS

CHAIRMAN ARMSTRONG: You have the proceedings from October, 2019, any revisions necessary?

MS. KERNS: I don't see any hands.

CHAIRMAN ARMSTRONG: Seeing none the proceedings are approved by consensus.

PUBLIC COMMENT

CHAIRMAN ARMSTRONG: At this point we will solicit public comment, and again as we always say, items that are not going to be discussed later, so things on the assessment or state proposals to resolve inconsistency are not what

we want to hear right now. Does anybody have a public comment on something other than things on the agenda?

MS. KERNS: Just a reminder to the public, you need to raise your hand by pushing the hand button if you want to speak. If you're having trouble with that you could shoot us a question or a chat. Mike, I don't see any hands raised.

CONSIDER ACCEPTANCE OF THE 2020 SHAD BENCHMARK STOCK ASSESSMENT

CHAIRMAN ARMSTRONG: In that case, we'll forge on, which brings us to Consideration of the 2020 Shad Benchmark Stock Assessment. This is an actionable item. At the end of all this we will need to accept the assessment and the review for management purposes.

PRESENTATION OF THE STOCK ASSESSMENT REPORT

CHAIRMAN ARMSTRONG: The first is the Presentation of the Stock Assessment Report, and that is by Mike Bailey. Take it, Mike.

DR. MICHAEL BAILEY: This is Mike Bailey from the U.S. Fish and Wildlife Service. I served as the Chairman for the benchmark stock assessment. I have about a 20-minute presentation, so I'll get started. The 2020 American Shad Benchmark Stock Assessment, here is our favorite fish just to start off.

Just for a brief outline, we're going to go through the stock structure, talk about life history information, and some of the data we collected, the assessment methods and methodology, and then we'll talk about the stock status and the conclusions from this benchmark. Stock structure, we had about 104 unique rivers, stocks from river beds. Out of those about 23 systems we actually had information to start the assessment.

Each individual river was considered its own stock, because of natal homing and some genetic differences. We used three regional meta-populations to share life history information. The species has a cline of iteroparous versus semelparous, and we use that as part of the breakup. Otherwise, this was work based on genetic information.

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We have the northern iteroparous population, which is north of the Hudson River up to the Canadian Border and beyond. We have a southern iteroparous population north of the Cape Fear River up to the Hudson River, and then a semelparous from the Cape Fear River down to Florida. All of those fish only spawn once and then die, as opposed to the iteroparous fish, which will spawn more than once.

We did use some coastwide meta-population analysis for mixed stock datasets, including coastwide trawl samples, and some other samples in which we simply don't know which stock those fish are coming from. I'll just show you a series of slides. These are actually slides of river systems we use in the habitat modeling sections.

All of the red dots are dams on those river systems. This is the northern iteroparous section, where we have data from the Merrymeeting Bay, Merrimack, and Pawcatuk in Connecticut. This includes most of the southern iteroparous populations, so fish that spawn more than once but less than north.

We have down from the Hudson, down to the Neuse River. From the Cape Fear River down to St. Johns River, we consider these all semelparous populations, in which they spawn once and then die after spawning. For a life history snapshot, we looked at growth. We used a Bayesian hierarchical von Bertalanffy growth model.

Again, when we didn't have great data in any particular river system itself, we were able to share within those three larger grouping sections that we just talked about. We shared within their metapopulations. We did look at climate, and looked at climate at sea to see how the changing temperatures at sea could change the maximum size and growth, according to some climate projections going out to 100 years.

For natural mortality we used the Then estimator, which is an update of Hoenig 1983, which was used in the previous stock assessment. That is looking at natural mortality based on the maximum age of any given population of fish. The maximum age was 13 for northern and southern iteroparous populations, and for the semelparous populations it was a maximum age of nine, both giving different natural mortalities. The maturity schedule, we looked at Ogives, which is how often fish are going to come back, and at what age they come back to the river. To get a better idea, we used a slightly different methodology there, looking at the number of virgin-spawners, so the first time the fish came back, and then used the natural mortality estimators to look at how often they would come back in the future.

We did not use looking at spawning checks, which was used in other assessments, because our spawning checks for American shad we didn't have a whole lot of faith that those were great checks of when fish actually came back. We had very little data from fish at sea, so with shad some rivers have good estimates of YOY, young of year, when they're still in the river.

But then you don't hear from them again until they come back to the ocean, or they come back to the river to spawn. We have some big gaps at sea, which we'll mention numerous times during the stock assessment. For data indices of abundance, we had 21 fisheries dependent surveys and 65 fisheries independent surveys.

Some of those surveys were young of year indices within river. We had several run-count indices, in which from either fish ladders or fish ways, and then we had a lot of CPUE, so catch per unit effort surveys. Just as an example, here is the Hudson River young of year survey, looking at larger populations back in the '80s and '90s to the points where we are today in which the index is significantly smaller.

We have some catch data, although with the closure of some fisheries we have a little bit less catch data than we've had in previous stock assessments. We have system-specific commercial data landings when possible. We have total mix commercial landings, both U.S. and Canada. The histogram on the right is

all reported U.S. Commercial landings, both riverine and ocean.

We have pretty limited recreational catch for the entire time series, so we don't know how to use that for much at all. The plot with the error bars is American shad total incidental catch and discard catch from the late '80s to 2017. Just a note on that. Midwater trawl fleets were included starting in about 2005.

Age compositions of fish, especially for shad comes up a lot. It's difficult to age shad. We have about 18 datasets representing 12 different systems, so we have several systems that have both scales and otoliths. Otoliths are generally better for determining age. You do have to sacrifice the fish to get those otoliths out.

Spawning check marks were imprecise, more imprecise than age data, and they were not used in the assessment for very much, except for some very minor issues. If you look at the figures, those are the CVs from comparing scale age estimates to known age fish. On the left in otolith estimates the known age fish on the right.

You can see the coefficient of variation for otoliths is much smaller. That more precise data gives us an idea that those otoliths are much more precise, and better to use. Some scale reading can be used, and it can get to a pretty tight coefficient of variation, although not all the time, certainly not as often as otolith ages. Habitat was something that we tried to tackle with this benchmark, to a higher degree than it had been done in the past. We looked at the riverine habitat area. This was based largely on expert opinion, and with GIF models looking at the idea of how big of a river shad are looking for.

What we did was we looked at historic habitat prior to barriers put in. We looked at currently unobstructed habitat, and then we ran kind of the pre-dam, post-dam, we ran some population models to look at some of the

population size and estimates of fish that we don't have coming back because of the lack of habitat.

That is something that I think we've put a lot of work into for this benchmark, and it really took a lot of hands to lift that, so I appreciate showing some of the habitat work. That is kind of what we have for data for the assessment methods, how we went about it was we did multiple different things, one of which was looking to power analysis.

When I'm talking about that I'm talking about kind of the signal versus the noise. We were able to look at abundance datasets, and look at trends over time periods. Through that power analysis we were able to look at, hey will you be able to see a change if a change occurs, looking at kind of your baseline data you've been collecting, and the variation about that?

We were able to evaluate uncertainty, and provide a basis for improvement to monitoring programs. The big question there is, are you collecting good enough data that you'll actually be able to see if there is a change? Another thing we did was trend analysis. We used Mann-Kendall for detecting trends in abundance, mean lengths, and mean lengths at age.

We also used ARIMA models to compare recent abundance to reference abundance points. Those Mann-Kendall abundance trends time period at a certain start year and then moving forward, the ARIMA kind of our change of abundance set was 2005, 2005 was when the coastwide ocean intercept fishery was closed.

You'll see in the results we used 2005 as kind of that change point, to see when we expect to start seeing changes. The assessment methods, again we did a per recruit analysis. We used estimates of spawning potential under various total mortality levels, relative to baseline spawning potential, so kind of our baseline mortality there.

We provided reference points for total mortality, using a Z percent. Most of those data inputs there were life history information for any particular river. We selected Z40 as a threshold for American shad mortality. That total mortality results in 40 percent of

spawning stock biomass per recruit of natural mortality.

But Z40 is more conservative than the threshold used in previous assessments, which was Z30. The more conservative threshold is appropriate, given published simulation analysis. Really, a big part of that is the data poor characterization for many American shad stocks, and the uncertainty in the resilience of the species due to many different anthropomorphic impacts. I've used total mortality estimators catch curves, to get an idea of abundance, of mortality, I'm sorry. Estimates of total mortality were based on the decline of abundance across subsequent age classes. The data input for these models were mostly age compositions. We were able to compare the Z threshold reference points to determine mortality status. We used the last three years, so 2015, '16, and '17 of those Z estimates to compare, to see if we had sustainable or unsustainable mortality. This is an example of using the Hudson River spawning stock Haul Seine Electrofishing Surveys, to look at instantaneous mortality over time, to see if it's above or below that Z line.

We also use a delayed difference model, which is a biomass dynamics model that allows for a lag in recruitment to exploitable biomass. We had some extra help with having some experts on this model in the peer review, which helped us change this a bit from how we originally had it to post peer review, we got some better answers from using the delayed difference model.

Estimates of exploitation time series, so fishing and exploitation resulting in maximum sustainable yield, which is what we compared to. The inputs for this model were catch, index of abundance, and life history information, and again we applied the stocks with active fisheries to determine the mortality status from those last three years of data we used, the 2015, '16, and '17, to indicate mortality.

We were able to for the first time with shad, use a statistical catch at age model for two

systems, the Albemarle Sound and the Potomac River. These were more advanced models that in the past we haven't had good enough data to use. It's a forward projecting population model that estimates recruitment, spawning stock biomass, and mortality.

It integrates the comprehensive suite of data, and can separate mortality from direct anthropomorphic stock removal. These removals can include fishery removal, and fisheries plus. In terms of the Potomac they also have a brood stock program, which removes (last word broke up). We were able to look at that as well.

The data inputs are, again this is a hungry model, it needs a lot of data. We used index of abundance, total catch at age composition, and life history information. This estimates the per recruit reference points internally, including the spawning stock biomass-based reference points for model estimate recruitments.

Again, we're using that Z40 to look at if it's sustainable mortality, and looking at the spawning stock biomass indicate that it's a depleted stock or an overfished stock. That was just a quick background. I will say this is a large document, and there is a lot of information in it. I'm just trying to touch on some of the highlights.

Looking at the results, the power analysis is signal versus noise assessment. This is going to be an important tool for fisheries managers to allow for future planning and sampling. Folks will be able to look at that and see if there are current samplings, with the current variability about that sampling is going to actually allow them to see if there is a change, in which we've set some of the change, what we're looking for in the model.

This is something that I think a lot of folks are going to go back after looking at this, and decide hey, are we sampling correctly? Do we need to augment our sampling? Do we need to do more? Do we need to do less? That is something we're happy that's going to be a tool for fisheries managers to use. You know our abundance trend, again the power analysis, about 57 to 65 indices were unable to detect trends over 10 years if the threshold would be set. Again, this is an opportunity to reevaluate. Are you going to be able to

see trends with your current data collection systems, and how should you change those?

Some of the adult trends, since 2005 we had 4 increasing trends, 0 decreasing trends. This is from the Mann-Kendall. Eleven with no trends, and 7 with conflicting trends, so a lot of variation since that 2005 benchmark kind of threshold we set to look at changes over time. The young of year indexes, again pretty mixed up and down trends.

Most of them with no trends, or datasets that don't have enough data to give us a trend. There is no consistent response in coastwide metapopulation abundance after that ocean intercept fisheries were closed in 2005. We were able to get some abundance status trends as well. The Hudson stock is depleted, so this is a qualitative determination for the Hudson, and a coastwide metapopulation based on historical landings, and indices of abundance.

When we had historic lands and indices of abundance, we felt like we could get the status of an individual river system. The Albemarle Sound determination was based on comparison of projected per recruit reference points and model estimator's recruitment. That was not overfished.

One thing to note is only adult mortality levels could be determined from the available data. We don't have young of year indices in any of our rivers to get good enough ideas of juvenile mortality. Three stocks are experiencing unsustainable adult mortality, those are the Connecticut, the Delaware, and the Potomac.

All three of these stocks are managed according to management programs, sustainable fisheries plans. Five stocks are experiencing sustainable adult mortality. The Hudson you'll notice, we've already talked about it as depleted. Although they're having sustainable adult mortality, they're under recruitment failure. I just wanted to mention that, a little misleading there.

A bunch of these rivers are under sustainable fisheries management plans, the James, York, and Rappahannock are under a bycatch plan. One thing we did note here when it comes to mortality status, is although we have three stocks that are experiencing unsustainable adult mortality, that is not necessarily fishing mortality.

That may be under other types of mortality, not simply F, but the other is anthropometric adult mortality that is probably featuring into those factors. For habitat assessment and simulation modeling, this is what I mentioned before in some of the methodology. We were able to get expert opinion and GIS modeling, get into a situation in which we can look at the first set up there is spawning runs with Habitats 1, Habitat 2, Habitat 3.

Those are just different units in an undammed river, and we have population models that can look at that scenario of all the river being opened. The next setup there is a dammed river, in which there is no passage at all. We can look at the habitat section that has no dams on it, and no increased mortality from upstream or downstream mortality at this dam. Then we have our current set up, which is the third scenario here, in which we have Habitat 1, before a dam. We have an idea of how many fish can be there, and then we model looking at pretty positive passageways to look at how those fish move up and down.

That is kind of our current state modeled throughout the coast, to get an idea of how many fish come up and down there. With that habitat assessment simulation modeling, the current is modeled with very optimistic upstream and downstream passage. At the rate of about 50 percent upstream passage per dam of all the dams, 80 percent passage downstream to adult, and then juveniles have a 90 percent survival as well.

Those are optimistic from a lot of the empirical datasets out there. The simulation analysis showed habitat restrictions are a major impediment to spawning potential, and that optimistic passage scenarios only offer modest gains in spawning potential. With those, the current setup we still have very limited and reduced spawning potential.

The dams that there is optimistic passage only gives about a 4 percent increase in the spawning potential. I know this is very small, but maybe some of you can point out your favorite river here, and we can see some of these. The black bars are the current available area downstream of the first dam, and the white bars are the total potential for the river, and that is based on our GIS estimate of habitat to look at.

The historic habitat prior to anthropomorphic barriers is certainly much higher. Currently there is a lot of rivers with a lot of obstructed habitat. Now 45 percent of the historic habitat is currently obstructed. Again, this was a lot of work put in by expert opinions on some good modelers that really gave us the first step back look at habitat for a lot of this on a coastwide basis.

You can see some of those white bars are quite large, meaning that there is a lot of habitat that is no longer available for shad. The conclusions, habitat loss due to barriers are likely restricting positive response in the coastwide metapopulation abundance. We have poorly characterized additive mortality because of dams.

We have many situations in which as a group we were debating looking at fishing mortality, and saying how much of this is fishing versus how much of this is habitat and dam related. Our Fs and our Zs started to blend together, which was difficult, and we talked about quite a bit in the assessment.

Habitat access is leading to a reduction of ability. Fish could be harvested either commercially or recreationally. I think habitat is the key to this benchmark stock assessment. Adult mortality was determined to be unsustainable for some system-specific stocks, indicating continued need for action to reduce adult mortality.

We need to have the ability to decouple fishing; recreational, commercial, and bycatch in other

anthropomorphic causes. Juvenile mortality during the life stage in the ocean between leaving the river and coming back mature adults is simply unknown. Even in cases where adult mortality is determined to be sustainable, overall stock sustainability can be compromised if juvenile mortality is too low. We still have a black box at sea out there, that we don't have a good idea of all the juvenile fish, and the fish that have already spawned once and go back out to sea that just don't do that.

The assessment doesn't rule out bycatch impacts on stock response, but it does provide a definitive link between stock trends and bycatch level, at which again there is a lot of uncertainty in that bycatch in fact. Looking forward, that unknown juvenile mortality is still a major limitation that we need a lot more information about.

There is almost no information collected as I mentioned on those juvenile fish. Another aspect of stocks at sea are mixing, and we don't have a good idea on if we do sample juveniles at sea, to understand which stock they're coming from. That stock composition data is essential to improving assessment of American shad.

We now have since the last stock assessment moving forward, we have much better genetic baselines that will allow for some of those juvenile samples collected at sea to be brought back to a natal river, with a lot of work that could be done. That is something that before the last stock assessment it was impossible, but now we're moving up to that phase.

The Stock Assessment Subcommittee just kind of wanted to throw some names out there. I could point to everyone and say what they've done, but that would take up a good chunk of the day. It was a pretty dedicated group that did a lot of work for this benchmark, and I'm pretty happy with the results.

Certainly, all the Tech Committee and some people came in and came out over the time period. I'm sure I left some people out. But this is kind of other folks to thank as well. One thing that we did reach out and ask for some short timelines on was that expert opinion on habitat modeling, so we appreciate that.

We were also able to get some information on Canadian stocks, which we previously hadn't gotten to the great got. Those were some great things moving forward. Again, ASMFC staff did a lot of work on preparing the actual report. Those large documents are nothing fun to wrestle with, and we appreciate that quite a bit. That concludes this for the big overview of the shad benchmark.

CHAIRMAN ARMSTRONG: Thank you, Dr. Bailey. I think what we're going to do at this point is forego questions, and hear the Peer Review Report first. But before doing that I would like to thank the Committee from the Board. That is quite a tome you guys created, and it's just a stunning amount of work by dozens and dozens of people. We would like to thank you for the effort.

I mean, you know with striped bass you're assessing the stock, actually two stocks. With this you're doing 23 separate stock assessments, an amazing amount of work. Thank you for everything you've put into it, and the whole crew on that.

PRESENTATION OF PEER REVIEW PANEL REPORT

CHAIRMAN ARMSTRONG: Before questions, I would like to bring up Dr. Karin Limburg to prevent the Peer Review of this assessment. Dr. Limburg.

DR. KARIN LIMBURG: Hey, Dr. Armstrong, how are you?

CHAIRMAN ARMSTRONG: I'm good, how are you?

DR. LIMBURG: I'm okay, on the fringe of the hurricane. I was told I would be able to show my own screen, so I'm hoping that the magic is happening. Good morning everybody, and good morning, Commissioners and good morning to all the other folks here. I thought I would be on camera, so I actually put on my

favorite fish shirt, which if you use a little imagination they look like shad.

Anyway, we'll just go with the PowerPoint here. This is actually my fourth peer review sharing, and I've done American shad before, actually. Let me just put this into show mode. I hope all of you can see this okay. If you do have questions, you guys can either ask afterwards, I think that is probably the most efficient way to do it.

I like this image from Denton, I think his name was Charles Denton, was a marvelous artist, and created many, many, very nice fish prints. I think the shad one is one of the finest, of course I'm biased. Just for background, I did my P.H.D. work at Cornell, in a period of pretty good shad abundance. I studied the young of year, actually, and they're moving out of the system. I know shad reasonably well.

This is what the team looks like, the faces here. We had a really interesting group of folks. Craig and I, I think you would say are more or less pure fish ecologists. Jamie, Mark and Quang are modelers. Jamie is kind of also gets out in the field quite a bit too. I think Mark may as well. That is a microphile. That is a real trophy morale that I'm holding in my hand, not to compete with Craig over there with his salmon.

But the three in the middle are from the west coast, Jamie and I are east coast. I'll also point out that Jamie and I, I think are the only two people around from any of the parties who were there before, including I think the Commissioners, who were involved with the stock assessment in 2007. Jamie and I are the institutional memory of that.

Because of that I've put in a little bit of comparisons with previous assessment. The process of assessment, we had this new one. This was the first assessment since 2007, so 13 years later. We had the first virtual peer review workshop, so we were on Go to Meeting for most of a week doing this, and I would say it went pretty well.

It's not quite the same as face to face in person, but next best, I guess. The review that we did looked at the data inputs, the model results, and all those kinds

of things, and the overall quality of the assessment. Mike rightly pointed out that this was a monster assessment. It is really a credit to the dedication and the hard work and qualities of the team of the stock assessment team that put this together.

I want to give you guys a little bit of context on this. I heard something that nowadays is sort of forgotten. I don't know what you Commissioners think about this, but the American shad was the number one fish, aside from cod, through much of American history. In fact, it was so important that in the 1800s it was one of the top if not the top, species of fish that was developed in aquaculture, because it was such a desirable fish. As it says here, it stands in very high, if not among the head of luxuries which our rivers afford. This is the first article in the transaction of the American Fish Cultural Association, which was renamed the American Fisheries Society, which is the world's largest professional association of fisheries biologists and managers, and everybody else.

It was really a tremendously important fish, and it's kind of been forgotten now, because of the phenomenon that you may have heard of called the shifting baseline. Whereas, as populations decline over time for one reason or another, we humans are very adaptable, and start moving on to other things, and so it sort of gets forgotten.

The question is, you know, so these are data which Mike Bailey also showed from just fisheries catches, so of course the catch statistics may be driven not just by the abundance of fish, but by people's preferences and other factors; weather and so on. But there is a remarkable trend in here, I think, and this, five-year trend line sort of smooths it out and you can sort of see.

Can you guys see my arrow on the screen? It shows, what we're seeing here are almost like stanzas, where this is sort of leveling down. Although I can't definitively say it's because there are fewer fish. We are very likely at

historic lows of American shad, or they are moving north is a possibility too.

But the thing that really gives me pause is, and I was tipped off really by Jim Cummins who I saw is attending here today too. He is a tremendous historian of the Potomac, and he had pulled together some data for the 2007 assessment, which showed that the Potomac was actually very full of shad in the early 1800s.

If we plot those data, what I'm showing is something that is normalized from, or sort of standardized to landings per river kilometer. What we can see is that the baseline of 1950, or the '60s and '50s, is so much less than just one river in the early 1800s. We have a rough idea that we are in a very different regime now.

Where our changes are today are almost unnoticeable when you scale it up to what was here historically. I also want to point out that shad back in the 1940s, when this National Geographic article came out, were reasonably larger than they are today too. I mean we can show some nice pictures of big shad, but they're really not like they used to be.

That is also something that comes out in the assessment report. Overall, the Peer Review accepted and passed the assessment. I wanted to just get that up front, as we did in 2007. These are the terms of reference that we have, what I call the marching orders. We were asked to evaluate the choice of the stock structure.

I assume that these are fairly standard, or more or less standard terms of reference. Looking at the thoroughness of the data collection, how all the various data were used and treated and presented. The methods and biological reference points, the models of which there was an abundance of models. Then for each document we were asked to look at the best, and make recommendations on best estimates of biomass, abundance exploitations. For management, although we sort of said that a lot of this was probably, we would be hesitant to use all of it for that. But if possible, just by alternative estimation methods. Then also, examine the choice of reference points and the methods that we used to determine them, and then look at the stock status determination.

Then also, finally, review the whole set of recommendations that were provided by the Technical Committee. Then make any additional recommendations as well. I'm not going to be able to get through all of them in this talk, in this presentation. The TC and the Review Panel both made a number of recommendations.

The Technical Committee had a whole slew of them, it's a great list, and then we added to that as well, which all of these are in the report. I wanted to show you, this is something I showed in 2007. This was to show what kinds of data were being used at that time. I think they actually assessed, broke the system up into something like 30 stocks instead of 23 that time.

What you should see here is that there is a lot of blanks. There is a lot of exes, which are unreliable data or deemed unreliable, and there were many fewer black dots of things that were used, which were mainly from commercial fishery data or adult data. There was some juvenile abundance information too, but really it was sort of sparse.

There was some information on dams, but that was sort of more or less a footnote. The kind of information that was available then was not, you know one of the things that the Technical Committee and Stock Assessment Committee knew at the time was that this was not a stellar dataset. I think that perhaps the shad and river herring folks since then have been laboring under a feeling of not having enough. Now, I think they have actually got quite a lot.

Then to compare that to today. Yes, there are some blanks in here, but some of them are because there just aren't fish passage facilities on a lot of these systems, so there is no way to count things on a facility that doesn't exist. But there is a little more data. Datasets are much improved from before.

I want to make that point, because I think the states have really been putting in effort on this,

and that's very commendable. No system has everything. I guess that is something we want to strive for. I can also point out that age determination, which is kind of a fundamental thing we need for understanding a lot of processes in the biology and natural history of shad, as was basically most other fish species.

We see that mostly there are a lot of esses in this column, S stands for scale, and scales are just not generally as easy to use to determine age of fish as their otoliths. As Mike Bailey pointed out, otoliths, you have to kill the fish to use them, but they are definitely better. It happens to be one of my very arcane skills to do a lot of work with otoliths. If you look me up, you'll see a lot of my recent work is on a lot of otolith work.

These are just some pictures so that you get a feel for what we're talking about here. Here are some scales, these are some scales of American shad on the left. What you can see here, as I pointed out with the arrows, are spawning sets, and those are actually made because the scales actually have some calcium in them, and as the fish are running up the rivers they are probably mining the calcium out, and the scales actually erode. There may be other reasons why they erode too, but that is certainly one of them.

Now they'll erode and then get kind of raggedy, and then as they go back out to sea and they feed and grow some more. The scales start putting on new growth, and they lose that check, which is actually very nice, and it reads out like logbooks right, so we've got sort of an idea. Each fish is sort of telling the story of its life.

Then otoliths as I said are a lot easier to use to age shad, although they are not completely easy. I would say that the clarity of the rings, which you can sort of see here in this image, do get clearer as you head northward. It probably has some kind of a temperature thing. As you look at them further south, they are kind of muddier to look at, trust me I've looked at them.

But you can get age information and my own specialty is to examine chemical composition of otoliths too, and we can get a huge amount of very interesting

information from the chemistry as well, although still a research brunt in many cases. But we can use them for example, we can look at in many, many systems we can look at the strontium that is imbedded in the calcium carbonate of the otoliths, and get a very clear idea of their movement in and out of salt water.

You can look at migration histories that way. I wanted to talk a little bit about what I call the modeling and statistical universe here, because there were really almost a dizzying number of models that were used in this analysis. If we're looking at abundance and size at age, those kinds of thing.

There was a suite of things that they run through. Power analysis is a statistical technique to ask, is the size of the change in the data big enough to see it over just background statistical noise. If that was the case, they could look at the auto aggressive integrated moving average type model, the ARIMA model, which is a time series technique to see if there are trends.

As Mike said, they were specifically using those to assess the changes since 2005, which was the last real ASMFC action mandate to stop the offshore directed fisheries, so they're asking that. Then also, they used what is called a nonparametric technique, the Mann-Kendall to ask more or less palliatively, have the trends been up or down.

Those datasets that were used, some of those extended back quite some time, so that they were of variable length. For biomass, the amount of tissue that is produced out there. They were looking at different ways of doing it. If there was no age structure data, or if it wasn't so good, they employed these Delay-Difference models, which Mike discussed.

Otherwise they used models that could take advantage of age structure, and they fall in a class called the Thompson-Bell Spawner/Recruit. How many spawners are produced per recruit. For total mortality, they

employed a technique called catch curves. Some people don't like them, or some experts don't like them, but they are very, very often used, and I will say that the Stock Assessment Committee used them very carefully, and assessed them very carefully. I think they went the extra mile to assess them by looking at different ways of calculating them, for example. If you have really data rich information for river stocks, including fishing data, then they could go forward with these so-called age structured assessment models as well, and Mike also talked about those.

That's what I called kind of the universe. As we were reading through the entire report, you know you have to sort of bear in mind that there are these many moving parts of it. Then on top of that, there were two new modeling approaches, which haven't been even considered, I think, in the previous assessment at all.

These, I think, are probably the result of the thinking and the mood from the 2007 assessment. One was that inland habitat modeling, which Mike eluded to, looking at the impact of dams on the systems, and the other was to try to address the ocean-mix stock. The fisheries in particular, although I threw in this shark to remind us that shad are, of course, subject to natural phenomena like predation as well.

We're not the only mouths out there going for fish. I also wanted to summarize the findings, and I wanted to compare nowadays findings for the status of your stocks again. The 1998 benchmark, which was reported on in the 2007 assessment and also just for comparison, and then also the 2007 itself.

What we have are hopefully the symbols that make it somewhat clear. Things that are sort of yellow are kind of stable, things that are green smiley faces are sustainable and increasing, and then the sad faces are declining, or unsustainable. Question marks mean not determined. What we see is that for the 2007, things were looking kind of mmm, not necessarily so great. I think this certainly puts some caution into people, as they went forward.

Then in '20, now 13 years later, the status was broken up into two items, the total mortality and the abundance. What we can see is that total mortality, I

made some of these smiley faces a little smaller, and shaded them a little bit less red, because these indicate that the assessment showed that the total mortality was unsustainable in only the most recent years, which was one of the things that the Committee looked at, versus longer term.

We have many systems where we just don't still know what that is like. The Hudson I want to point out is listed as having sustainable mortality, but I've put it sort of a little smaller with a slightly paler shade of green, because honestly, the population levels are very, very low right now. I think that it's indicating I think that it's stable.

But as has been said, the Hudson's abundance is depleted, so I've put a crying face on here instead being the system I know the best. Really the only other assessment that we have, as was mentioned before was for abundances is that the Albemarle Sound from the modelers was not overfished.

The other systems, again a tremendous amount of unknown, and it does make me kind of just as stepping back and asking. Well, here we know more about these dots than ever, and yet we still can't make these determinations. I'm not really sure why that really is, but it is something again to think about. Just the findings that we had. We accepted the choice of stock structure. It seems pragmatic. Now we know that the shad spawn in many systems. They mostly have a lot of fidelity to a natal river, like the salmon do. They do some straying, but not as much as they do homing. We think that the choice was good, and for some of those complex systems particularly in the south, where there are many rivers that come out in embayment's and things like that.

The choices of how to group them was good. Evaluating the thoroughness of the data collections, this is a quote from our report. "Our Review Panel was very impressed (and a little overwhelmed) by the amount of data available for assessing American shad stocks."

The datasets were comprehensive and thorough.

There was an acknowledged weakness on the part of the Stock Assessment Subcommittee, as you saw before, that many states used scales to age their samples, and we recommend as they did the use of otoliths. I think all states are now collecting otoliths. You know I don't want to beat on this too much, but it's knowing how fish age, what that composition is, is quite important, for at least the current way that the assessments are carried out.

The models really do depend on knowing age. I can just say that I work also in the Baltic Sea on cod over there. They are in such bad shape from really low oxygen problems in the Baltic Sea, and other problems too, that they don't even lay down good rings on their otoliths anymore. We're using other methods to tease out the age from the otoliths, instead of looking at rings.

Evaluating the models and so on, we were impressed by the number of analytical methods. As I said, there was sort of a dizzying number of methods that were used. We did find that the analyses were complementary too. For the trends, the trends will be followed up, of course, as we go into the future.

It was recommended that from the more advanced time series analyses could be used. Instead of just looking at ARIMA models, you could use other types that would remove sort of any kind of temporal trends, like an uptick from, you can separate out those to see the ups or downs from the other wiggles in the data, and look at the other wiggles, just putting it simply.

Their techniques go, such as Dynamic Factor Analysis that look for underlying factors, so for instance there may be some climate driven factors, or something else within a large region, like one of the metapopulation regions. Those could be employed too. The Committee found that the Thompson-Bell biomass per recruit model wasn't a good model for semelparous stock, it was designed for these recruit spawner stocks.

The other models were deemed to be appropriate, but as Mike mentioned, the Delay-Difference model

was modified by one of the experts on the Panel. Kerne actually developed some of these models, and so he helped them, helped the Committee to explore alternate assumptions, and add more diagnostics. That was quite useful.

The Catch Curve, we agreed with the Subcommittee that it is very impractical to split fishing from total mortality. I guess you've heard now from both Mike and myself about the other mortality that happens because, fishing is one factor in the suite of factors that lead to shad dying. It's difficult not to keep them together, I guess to split that out. We discussed the biases in the current method. Jamie Gibson in particular proposed an alternative that appropriates information from spawning history. He was very keen on that. That is also in our report, but I don't have time to go into it in detail.

Then for the age structured model, these are definitely the most advanced models that were used. The only systems that really had enough data to conduct these models was the Potomac and the Albemarle Sound, and they were fully explored with various types of analyses and diagnostics. The Review Panel had three recommendations.

One was that one of these models, the simpler versions of these so-called statistical catch at age models broke down, because they didn't account for the availability of shad to actually be caught. Basically, what they were doing was catching fish that shouldn't have been caught, because they didn't separate out mature fish from immature fish.

This does actually get into something else, which is that immature fish are assumed to remain in the ocean, and not run with the mature fish into the rivers, where they can be caught. I know from my own work that that is not always the case, at least I've studied one-year old fish, and I know that they go back a lot of times with the spawners.

We don't know how many, what fraction of the population it is, but we do know that we can find them coming up in the ocean. I think it's a nuanced issue that probably bears more research, and also to run simulations under different assumptions of fishing and biomass. Again, getting at this question of where are the immature fish?

If they use one of these more advanced models, the stock synthesis model, they could model the immature fish separately from the mature fish, or even better would be to have a shad-specific model, assessment model. This would of course take more time, because it would require more data. It would require better estimates of spawning marks.

Getting the idea of like how many times do these fish actually go up into the rivers. That again, it's a long-term goal. It's a very good goal, and I think it would be something that would be wonderful to have some P.H.D. students work on. The habitat modeling, we were impressed with this analysis.

We thought that this perked the whole assessment up to a different level, and we think it's necessary for diadromous fishes. We've seen, having often shared the reviews of American eel and river herring in 2012, the fishery came up then too. But we were told, well you can't really do much about it, because the only thing that fisheries managers can manage is the fishing level.

But we actually think that this is something that can be used, that we now have this information, and we can say, we or the ASMFC Commissioners can make strong recommendations to other stakeholders to remove dams when it's possible. I think there is just a growing body of evidence that dam removal is probably the best thing for improving the sustainability of diadromous fishes, or not to build them in the first place, which is going on in other parts of the world. I think that is a very important finding that comes out of this, and I do encourage you to consider that. The ocean mix stock modeling, the report noted that the results were extremely variable, the datasets are very variable. But the Review Panel thought that the approach that was used was the most appropriate. It was an expert from NOAA Fisheries who conducted that analysis, and the Panel

felt that the estimates would improve with better monitoring of ocean fisheries.

One point I want to make is that shad really connect the dots. All these diadromous fishes connect the dots between the watersheds and the open ocean. From the headwaters, which influence a lot of the water's dynamics and the land use, and the damming, and so on, the pollutants that go in all the way out to the sea.

These fish are real connectors, and you know if you can manage them sustainably and well, it means I think that we're dealing with some of our problems in a more appropriate way. For the estimates of biomass, abundance and exploitation, we felt that this was by and large done well. We did make the point that the Delay-Difference model is not designed to be used on semelparous stocks.

We also agreed that the total mortality being highly variable, or the estimates of certainty are not very certain. Wide confidence intervals means that that is the case, and have to be a somewhat a little bit "grain of salt" on this. For reference points, we appreciated the many ways that were done for assessing so many populations and locations.

Where status was undetermined, there was still an awful lot of information that was really informative. I would be reading along in these various river chapters, and think wow, this is really an amazing amount of data, and then at the end they would say, status is unknown. I think that they are probably close to being able to say something in many of the systems.

But I think the Subcommittee was hesitant to make a concrete determination often. For their recommendations, there were just many, many. One I'll just point out myself, because I think about this in the context of the Hudson, although not all these predators are in the Hudson. But young of year, Mike Bailey said that very little is known about young of year.

I kind of question that, because there are so many Masters and P.H.D. studies that are focused on shad and river herring, I think. It's really getting some of that information really incorporated into stock assessments may be where the gap is. But one of the things that I'm increasingly aware of in the Hudson is that we have a suite of really novel introduced predators.

They have been introduced either by moving in through connected waterways, like the Eerie Canal connecting from the Great Lakes over into the Mohawk River, which is a tributary to the Hudson, or through introductions, which are the case with things like the channel cat and the blue catfish on top, which were introduced as sportfish in the south, and are moving their way up. The channel cat actually prefers to eat select from alosine herring as prey.

Up north we have more pike, we see more pike, and then of course the nasty looking face there is the snakehead, which is making its way through parts of the range as well. Just one of the threats. But there are other things, there are many, many, other things that we have recommendations for. All of them are to get an idea of what these fish are doing in their ecosystems. But from sort of the small scale, fine scale genetics on up to their role in these systems. The other thing to mention is just that we also can't forget that climate change is moving right along. Although this panel comes from the Stock Assessment Report, and I would have really like to have seen us go back to the earlier decades, because then you'd really, really see the changes.

These are catches as seen from the NOAA Fisheries. When you see the changes in the dynamics of where the shad are being caught has really moved northward. I think John Hare, who is on this call I think, and Janet Nye and their colleagues have studied this quite a bit, looking at how many stocks of fishes are moving northward, and shad is certainly one of them.

The Committee used climate projections, the BAU stands for business as usual projection, and then with some mitigation, some climate mitigation, looking at the impacts of rising temperatures on the parameters of shad growth. Even with mitigation we're going to

see declines, and as I mentioned we're already seeing some declines.

Whether those are directly from you know the sort of metabolic task of rising temperatures making fish respire more and grow less, or if it's a change in the food web or some combination. It's likely to be there. It really means that we have to be more precautionary. It doesn't mean we should shut down fisheries, where they can be prosecuted.

But we just have to think about it more. It's more like, I work on ocean deoxygenation it's one of my research topics. There our recommendations are that for coastal systems that are subject to dead zones that management really has to take care, really take care of nutrient management, so as not to exacerbate that problem.

It's the same thing here. We just really have to think about it more holistically. For shad and shad fisheries to be sustainable going forward, we do need to think in that broader context. The watersheds to the sea I'm very glad to see in this report, and climate change, which I'm glad to see in this report, and continued improvements to monitoring and data.

Don't wait, please don't wait another 13 years for the next benchmark assessment. We've discussed how that could be, the timeframe could be shortened up and maybe split apart to ease the burden on the Committee. Thanks for listening to this part of the presentation. I just wanted to end with saying that shad is an important, important fish.

We forget so often about it, but it's one of my rites of spring. That's John Waldman in the picture, we were fishing in the Delaware this spring, where it's legal to take home fish. I cooked up some shad roe, which is absolutely awesome, and smoked some shad as well, which is totally awesome too. If you have questions, I'll do my best to answer. Thanks for listening.

CHAIRMAN ARMSTRONG: Karin, thank you so much. That was a great review. But the best part is, I just heard you volunteer for a Review Panel shorter than 13 years from now. That's awesome, we'll just pencil it in. If the assessment is daunting, the review is just as daunting. It appears you had a great panel to work with. The advice coming out of there is fabulous, and particularly your historic and high-level overview of shad, very, very helpful. You know the perspective, we're at very low levels, even though we look at some runs and say, hey we're doing good. We're really not doing good across the board. We have a lot to think about coming out of this. Our first task will be to consider accepting the assessment and the review for management and use. In preparation for that I would like to open up the floor for questions for Mike and Karin, and Board comments on the assessment from the Board. The floor is open.

MS. KERNS: You have questions from Marty Gary, Justin Davis, and then Loren Lustig. Mike, I think you should also know we have questions from members of the public, just as an FYI for later.

CHAIRMAN ARMSTRONG: Okay, and we'll cover that when the Board members are done. Marty Gary.

MR. MARTIN GARY: Thank you, Dr. Bailey and Dr. Limburg for both all of your hard work, and also two really spectacular presentations. I understood I think most of it, so that was a good highlight for me. I appreciate everything you put into bring this forward to us today. I have two questions. If either of you want to try to respond to them it would be appreciated.

Just a little bit of context. Dr. Limburg, you applied a green smiley face to the Potomac back in 2007. For folks listening and members of the Board, a lot of that I assume is attributable to our fishery dependent bycatch CPUEs, which showed a trend of ever-increasing abundance of American shad in the Potomac.

Every year I look forward to getting the new index values updated, and media calls coming in. Amongst all the other challenges we have that was one of the bright spots. Now we have this assessment to shed some new light. I heard Dr. Bailey say that the

Potomac had unsustainable adult mortality, but it may not be attributed strictly to fishing mortality, which could either be as I understand it, from the bycatch fishery we have, our gillnets and pound nets, or the brood stock collection.

For folks on the Board, PRFC typically issues somewhere between six and eight scientific collecting permits to collect broodfish, which are strip spawned and then taken to hatcheries for restoration efforts in other rivers. This typically happens just down from Mt. Vernon and Monticello, hence the “founding fish” and the importance too of shad in the Potomac, but certainly the eastern seaboard.

But my questions are, and just one other item. We also, Dr. Limburg, you mentioned in one of your last slides predators. I think a lot of folks know we have a huge biomass of invasive blue catfish in the Potomac. It just so happens the epicenter of their distribution overlaps with where shad spawn, and presumably where the juveniles are using habitat in their early life stages.

I guess the first question I have, and maybe it will be speculative in your answer is, what do you think is contributing to this unsustainable adult mortality in the Potomac, specifically? I know some of the research that’s been done in the Potomac and in the Chesapeake show that predation on the alosine by blue catfish has not been that significant. But I can’t help but believe, given the biomass we have, it’s having a significant impact on them. I guess the second question, and it may spill over into our management response dialogue, is the efficacy of the continuity of that bycatch in our fishery dependent collection of data. Where is the value of that going forward, if there is any? Again, sorry for that long series of dialogue leading up to those questions, but again, thank you so much for your presentation, and I’ll listen.

DR. LIMBURG: Mike, do you want to start off?

DR. BAILEY: I think to start off, I would introduce Jeff Kipp, who worked on some of the Potomac specific models. We may tag-team that question. There were a bunch of different parts to it. I’ll start off by talking about the catfish, and there was a recent paper that came out looking at the two different, I think blue and the flathead, and showing that while the abundance was higher for the blue, the flatheads seemed to really focus in on alosine as a preferred.

They may have had less numbers, but they were looking for alosines more, which may be more problematic than just large numbers. It’s probably a big mix there. But certainly, we did include that, because it is an important component. I think with that I’ll just kind of hand it off to Jeff, to talk a bit more about the Potomac model.

MR. JEFF J. KIPP: Just to touch on that research Mike cited on the catfish, the invasive catfish species. It did find that blue catfish are more opportunistic, and so their diet tends to be more proportional to the abundance of prey species in the river. You know take that into mind, as shad abundance would increase it would become a bigger component of the blue catfish diet.

If you look at the trends in abundance that we have, so we have some young of year indices, and some adult indices in addition to what Marty mentioned in the CPUE index. You can see a very clear increase in shad abundance in the early 2000s. Then those increases tend to level off. If you look at the trend analysis on the indices of abundance in the assessment, there were no trends detected since 2005.

But if you look over the full time series of those indices, which go back into like the ’80s or early ’90s, they did find increases in abundance. That is mostly attributable to those ramp ups that occurred in the late ’90s and early 2000s, but have since leveled off. You know it could be potentially blue catfish are taking advantage of that increase in abundance that occurred in the early 2000s.

But in addition to that, the only other sources of mortality that we know of there going into the adult mortality estimates out of the age composition data, are bycatch mortality, and then the brood stock

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mortality. You know we recognize that those brood stock fish are taken for the purpose of improving recruitment and raising those fry. But they don't get the chance to repeat spawn, as Marty mentioned they're sacrificed.

They don't have the opportunity to come back, so they contribute to some of that adult mortality. But in addition to that there is the nebulous additional sources; habitat, what's going on in the ocean, the ocean bycatch, which we still just don't have a grasp on with the available data, and how much it contributes to each of the individual stock that are overall mortality. Hopefully that was some good context, but let me know if that didn't fully answer your question.

MR. GARY: No, thank you, Jeff. I appreciate that. Then I don't know if we want to defer this to management responses, but I don't know if any of you can get your thoughts on the value of the fishery dependent collection of data that we have a pretty long series on now, and where you see that standing going forward.

DR. LIMBURG: If I can just jump in, I think any long-term data are important to have. We're facing the issue in the Hudson River system now that some long-term monitoring has ceased, and we are trying to reimagine ways of making it happen again and how that should be. I think you obviously can't see many phenomena if you don't have some kind of long-term data.

You know understanding some of the drivers on the data are very important, fisheries changes can be from behavior, for example changes in what people like to do, the gear that they use and so on. But I still think it's invaluable to have the data, just personally speaking.

MR. GARY: Thank you, Dr. Limburg, and thank you Mr. Chairman for that generous apportionment of time. Thank you.

CHAIRMAN ARMSTRONG: Toni, I have Loren third, I missed the second hand up.

MS. KERNS: It's Justin Davis, and then after Loren will be Cheri Patterson.

CHAIRMAN ARMSTRONG: Okay, Justin go ahead, Justin Davis.

DR. JUSTIN DAVIS: I'll just start by thanking Mike and Karin for a few excellent presentations this morning, and thanking the Stock Assessment Subcommittee for all the work that went into this document. I've got a two-part question that has to do with these terms sustainable versus unsustainable mortality, reference to the total mortality reference points.

I think those terms, sustainable or unsustainable. If you ask ten people, what does that mean? They would say sure, I know what that means, but then if you ask them to expound upon that you might get ten different answers. I wanted to provide how I'm interpreting those terms, and see if that matches with what the technical folks interpret it as.

I view the idea of unsustainable mortality here as meaning that the stock is experiencing a level of mortality that is preventing it from recovering to a level of abundance that would be typical of that stock, under sort of a baseline natural mortality level that is typical of, you know of fish of this life history and maximum age.

But I don't interpret it to mean unsustainable in the sense that we would expect sort of extirpation of local extinction of the stock, in some reasonable timeframe, 20 years, 50 years, and then also that level of mortality may not even lead to declines from where the stock is now. That the stock may be able to persist at this level of abundance, with maybe a truncated age structure at that level of mortality. I'm just looking for maybe a little clarification on the interpretation of those terms, sustainable versus unsustainable mortality. Then related to that, what was the rationale for changing the level of what was defined as unsustainable mortality in this assessment, making it more conservative relative to the past assessment?

CHAIRMAN ARMSTRONG: Mike, could you answer that?

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DR. BAILEY: Yes, I think for this one I'm going to pass it off to Jeff as well.

MR. KIPP: Thanks, Mike. Justin, I would say that your interpretation is correct. We chose a reference point based on the per-recruit analysis, so we're shooting for the D40 percent, or a mortality that gives us 40 percent of the spawners per recruit under that baseline sort of natural mortality you mentioned, based on the longevity of the species.

In theory, this species could stabilize at a lower abundance under higher mortality rates, so it doesn't necessarily mean the unsustainable doesn't necessarily mean that the stock is trending towards extirpation. I think the other question was, why we chose the Z40 percent changed relative to the last assessment of the Z30 percent.

The Stock Assessment Subcommittee did a review of the literature that are available on these per-recruit analyses, which are typically meta analyses on various stocks, and looking at sort of what that sweet spot in mortality is that you would want to shoot for. After that review, we felt that D40 was a more appropriate level.

It's a bit more conservative, and that is to note sort of the data uncertainties we're dealing with here, and just the uncertainty in this species being at such a low level, what the uncertainty is in those appropriate mortality levels. I think it is sort of nodding to the uncertainty here, and the precarious state we think a lot of these stocks are currently in, and that we think we should be shooting for something a bit more conservative than was being targeted in the last assessment.

DR. BAILEY: To add to that, I think some of that increased uncertainty comes from a better understanding of aging of the fish, and certainly we have a lot more quantitative data now that we can say, scale aging that was used in previous stock assessments probably was not nearly as accurate or precise as we thought it was.

DR. LIMBURG: That's kind of a little bit of a black art to age from scales, I think. I will say that some people are very good at aging with scales.

CHAIRMAN ARMSTRONG: All right. Loren Lustig.

MR. LOREN W. LUSTIG: Thanks to Dr. Limburg for a very fascinating report. I really have two questions, and they relate to historic abundance. Predominantly I'm interested in the Susquehanna River. I was interested in the photograph that was shown of a commercial angler there with a small skiff, and these really large American shad.

My first question is, based upon my own recreational fishing in the lower Susquehanna, is the hickory shad that comes up just up the river, just before the American shad. Is the hickory shad a species that would have ever been commercially harvested? I'm interested in knowing if the population of hickory shad shows the same sorts of fluctuations, perhaps based upon riverine habitat quality as the American shad. If it does, then it would be perhaps data that we should consider as we move forward with our American shad assessment. Thank you.

DR. LIMBURG: I'm not sure who wants to take that.

CHAIRMAN ARMSTRONG: Loren, who do you think should answer that?

MR. LUSTIG: Well, the person with the most knowledge. I would wonder if Dr. Limburg could comment about that.

DR. LIMBURG: Okay, I can say that I don't think there is a lot of fishing on hickory shad. I remember there was a guy, I think he was at Virginia Commonwealth University, who used to study them. He commented that they weren't very good eating, which surprised me. I've never tried them myself. I've only seen one hickory shad myself.

They are not as abundant up north as they are in kind of the Mid-Atlantic states, but they may come up of course with climate. I think what I know is that they are kind of recreationally angled. But I don't know how much they compete, for example, for habitat with American shad. I think again, I think there are a

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The Board will review the minutes during its next meeting.

lot of questions, a lot of just open unknowns about them. It's the fate, unfortunately of fish that don't produce as much income to be less studied, unfortunately.

CHAIRMAN ARMSTRONG: Okay. Cheri Patterson, next question.

MS. PATTERSON: This was very informative. I really see a lot of work involvement here, and I am in awe of the work. Is it possible to go back to Dr. Limburg's presentation, where it shows the northward movement of shad stocks?

DR. LIMBURG: Yes. This is, if you can make my screen visible. I don't know if it is or not.

CHAIRMAN ARMSTRONG: It's not yet.

MS. KERNS: Cheri, if you could ask your question and we'll get you there. It's just going to take us a couple of minutes, so if you could keep asking questions, just to keep us moving along.

MS. PATTERSON: Okay great, thanks.

CHAIRMAN ARMSTRONG: Do you really need that, Cheri? Could you work around it?

MS. PATTERSON: Well, I could try to work around it. My question has to do with, with this stock assessment was there any sort of analyses, and I'm sorry if I missed it, to move some of these datasets, or to think about moving some of these datasets northward? I believe in long term datasets; I think they are very important. But if they are showing some trends that are not easy to analyze, and it looks like there is a northward movement of this population. How is that going to be analyzed in the future, so that we're not necessarily looking at downward trends in all the wrong places that we might be literally following these species, as they are doing this northward movement? I'm just concerned about the habitat and life cycle stressors that might be affecting them in the Mid-Atlantic, further south and such, and we're

not really capturing their northern movement into new habitats.

DR. LIMBURG: I can take a stab at that. Cheri, I think that was a great question. I think one of the big questions for me is, with regard to these alosine herrings that have very broad latitudinal ranges and site fidelity. We know that they establish these in genetically distinct spawning populations.

One of my questions is, are they, and you know we're only looking at a tiny, tiny moment in time over the course of their evolution, and they've been projected to massive glaciers, glaciation events, and probably warming events and hybridization, and very flexible fish evolutionarily. But the question I have in this particular moment is, are the populations just going to be winking out in the south, and enlarging, expanding to the north, or are we going to actually see hop scotch movement of populations from the south to the north?

That is the kind of question that can be addressed by genetic analysis, and I believe there is some of that work going to be started. I think it's one of the big questions for these fish. It matters, I think quite a lot. For example, if the hop scotch hypothesis is correct, then perhaps the reason why shad are just about gone in the Hudson might be because they moved north.

Maybe we have to wait until southern populations start to colonize. I have no idea, it's an open question. But I think we'll probably be approached to asking that, is to try to do the genetic work, is my guess. From otolith chemistry we can also identify populations. But I don't know that it would address exactly the questions that you're asking now.

CHAIRMAN ARMSTRONG: Thank you, Karin. Mike Bailey, would you want to add to that?

DR. BAILEY: It's a hard question, and part of it is the latitudinal gradient of some of the life histories, and also some of the habitat, which more southern rivers typically have a dam much further, marked out much further. I think it's a good question, it's one to think about. She gave a great answer. I don't think we can do anything but make up stories right now.

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It's something to consider though, with climate change and shifts; not only the freshwater shifts, but also the marine shifts. Right now, we are still a lot of open question to where are all these fish moving at sea. That may be a bigger factor, if fish from Florida have to add an extra 500 miles north in their oceanic journeys. Well that may make a much bigger difference than fish off the Merrimack River have to go. It's really a confounding question. There is a lot of interesting things to think about, but I don't think we have any solid answers.

CHAIRMAN ARMSTRONG: Toni, more questions from the Board?

MS. KERNS: Yes, we have Bill Hyatt, Lynn Fegley, and Roy Miller, and Emerson Hasbrouck.

CHAIRMAN ARMSTRONG: Okay, let me write those. Bill Hyatt, please.

MR. WILLIAM HYATT: One of the things that surprised me from this assessment was the fact that current fish passage only for about a 4 percent or so increase in potential spawning. That surprised me, because it seems that fish passage work is being done all over the place. I would have expected a much higher number.

One of the things that I'm wondering is if there was any assessment done on how much of that may be lack of (broken up word) due to inefficiency of existing fish passage facilities. How much that 4 percent number might be improved from technological fixes of the existing facilities.

DR. BAILEY: Thank you, Bill for that question, this is Mike Bailey. In the analysis we did for the coastwide stock assessment, we kept those passageways static. Most of this work was done by Dan Fitch from University of New York State College of Oneonta, and Joe Zydlewski from USGS. For different rivers they have worked with very similar models to look at different passage rates, and they do make a difference, especially adult bounds remigration.

For this coastwide model we kept it a bit more simple, and I think if we did increase that number of passage rates, we would see a greater increase. But we didn't run a sensitivity on that, at least that I have at my fingertips, to see how much that 4 percent could increase. For individual river models they have it, for this coastwide one I don't have it at my fingertips.

MR. HYATT: There is a potential there on the spawner side?

DR. BAILEY: Yes.

CHAIRMAN ARMSTRONG: Lynn Fegley.

MS. LYNN FEGLEY: Thank you to the peer review, Dr. Limburg, and to the Stock Assessment Committee that is a phenomenal amount of work. My question is really basic. You know this species is so different than other species that we manage, where we have you know reference points, and we sort of understand what we need to do to manage fisheries relative to our reference points. Our action item today is to accept that assessment for management.

I'm trying to wrap my head around what that means. You know, so to Justin Davis' question about sustainability. It sounded like with the Z40 reference point it puts us in a place where we probably we wouldn't be rebuilding. Maybe we would be holding the population stable at this low level, but we would not be extirpating the population, although then we transition to climate change, and we talk about populations vanishing from areas to the south.

I guess my question is, basically what does it mean when we accept this for management, and what more could we possibly do? I love the habitat piece, because I think it gives us really a platform to work from with our partner agencies and other folks involved with habitat, as Dr. Limburg says. But I'm really trying to understand, if someone could help me. If we accept this for management, and we have a fishery that has unsustainable levels of mortality on adult fish. What does that mean?

CHAIRMAN ARMSTRONG: Thank you, Lynn. It's such a great question. It really crystalizes a lot of why we're sitting here. It comes to, do we just want to hold in place, or do we want to actually rebuild, which

These minutes are draft and subject to approval by the Shad and River Herring Management Board.
The Board will review the minutes during its next meeting.

might be much stricter than what we're thinking about. Why don't we start with Mike Bailey?

DR. BAILEY: That's a hard question, and frankly my work is more focused on restoration, so I look at this stock assessment from one aspect, in which there should be a lot more shad out there. I'm not sure that is what everyone else thinks. I'm almost going to skip that question, because I think, well I guess that is a question for the Board.

Are we looking to rebuild shad stocks everywhere, or are we looking to rebuild shad stocks in some rivers, or are we just looking to have better data on those shad stocks? I think that is more of a question for the Board than for me. For me it's restoration. We need a lot more fish than we have now. We're way below where we should be, and that starts with habitat, in addition to the more restrictive catch measures that has already been. I think the missing piece now is focusing on habitat work and continuing on with those limits to fisheries.

MS. FEGLEY: Can I follow up on that real quick?

CHAIRMAN ARMSTRONG: Sure.

MS. FEGLEY: To that point, does that imply that if you were to get that total mortality down below the 40 percent that you could begin rebuilding? I guess that is one of the things I'm trying to understand.

DR. BAILEY: Go ahead, Jeff Kipp. Maybe you can tackle that question better.

MR. KIPP: Yes, so the Z40 threshold is what we think is the appropriate level, and yet that should allow for rebuilding of these stocks, assuming that the juvenile mortality, so when these fish leave as young of year and then come back as spawners. Assuming that those mortality levels are sustainable as well, which right now we don't have the data to assess.

But in theory, that Z40 would allow for sufficient SSB per recruit to build these populations back to what we think are the optimal levels. I think we recognize the concern here about what do you do. It's a total mortality estimate, and again we don't partition these mortality estimates into their individual components, because we just don't have the data to do that.

One of the first things I think that came out of this assessment is again, to highlight that we need certain data components to be collected, most notably I think stock composition data from the ocean. There is bycatch going on, but we don't know how that bycatch is impacting these individual stocks.

It might be impacting some more than other, but we don't have the data to determine that now, because we don't know what the stock makeup is of that bycatch. I think data collection is one of the emphasis out of this, to get us to a place where we can better partition those mortality sources, and determine if fishing in a particular river is limiting the rebuilding of these stocks. I hope that helps address. But yes, it's a tough question when we don't know what the various factors are doing to these mortality rates.

DR. LIMBURG: If I may jump in also, just to say that yes, I think both Mike and Jeff are right. But remember that we're at such low levels of populations that a removal is proportionately more than it would be if the populations were really high. That is why we have to be cautious. Not saying to shut down fisheries, but I'm saying be cautious, and think about that.

I think it also gets at Mike's point of you know we need to tread on places that we normally haven't trampled, which is talking about opening up habitat. I've studied this myself in some of the rivers of the east coast. You know the biggest difference you could probably make is getting fish up the Susquehanna all the way.

You know taking down the Conowingo Dam. The passage doesn't work. I know Sheila Eyster is on this call, and we had discussions about this. They're doing truck and transfer now, but we know that the most effective way, if we really, really wanted to get fish up

and rebuild those populations there, it would be no dam.

That would be the way. The Susquehanna has other complications, it's got the Conowingo pool is full of sediments that the Chesapeake Bay Committee doesn't want to have rolling down into the Bay. It's got a lot of complicated things going on. But I think it could be managed, but it would take a lot of work and planning.

CHAIRMAN ARMSTRONG: In front of Roy, who is next, hang on a second, Roy. Mike, are there empty rivers that could help build up the population by restoring runs? On the east coast to restore runs that we haven't done anything about?

DR. BAILEY: I think there are. I think some of those rivers are, we could take for example the Penobscot River, which the first dam ahead of tide wasn't passing any fish, so we didn't know what was below that river. I think there is probably a lot of population below low on rivers that are populations that still exist that we don't know anything about, because they don't pass. There are a lot of opportunities in those smaller systems.

CHAIRMAN ARMSTRONG: Okay thank you. Roy Miller.

MR. ROY W. MILLER: Thank you also to Mike and Dr. Limburg, and to the stock assessment staff, and everyone who worked on this truly noteworthy assessment. My question, I'm going to apologize in advance, because I did lose Wi-Fi for about 30 minutes, and so if I repeat a question that has been asked and answered, I apologize. But I wanted to follow up on the question of Justin Davis, and also Lynn Fegley touched on the same thing, regarding these unsustainable populations.

I'm specifically referring to the Connecticut, the Delaware and the Potomac. Of those three obviously the Delaware is nearest and dearest to my heart, since I used to serve on the

Delaware River Fishery Management Club for many, many years. But anyway, if the mortality is unsustainable, let's say in the Delaware, and the Delaware is essentially undammed, getting into the hundreds of miles upstream into the headwaters in New York state. We can ignore dams on the main stem, which is (broke up) compared to the Susquehanna. What can you do to turn that situation around regarding unsustainable mortality? In other words, would it be a waste of time to further restrict fishing mortality on the Delaware stock?

Would it be worthwhile to pursue that now greatly depressed fishing mortality over what it used to be many years ago, or at least at harvest, compared to what it was many years ago? Is it worth pursuing that last aspect of something we can control, namely fishing mortality versus other things as yet undefined? I'm curious what our two reviewers think about that particular question.

CHAIRMAN ARMSTRONG: Great question. Mike, why don't you take a crack at it, then we'll let Karin.

DR. BAILEY: I will apologize for a second. You broke up a little bit there, but I think I got the base of the question. While the Delaware does not have a dam, it does have some water quality issues in some years that are really left undefined. We don't know that component of the degradation affects some of our adults spawners, including those fish that may be spawning and then leaving later in the year, when water quality is detrimental to health.

We don't have that answer. I think that comes down to when we get to a lot of river specific questions. We lose a lot of the specifics of the river and what's actually causing some things. The Delaware certainly we see fish went way, way further than what other rivers. We have to understand, those fish that are making its way up in the headwaters. Are they able to turn around and make it out of the river with the water quality as is?

I think with that I'll bump it to Karin, but realizing that it depends on what our whammy bar is. If our one whammy bar is fishing, then that is what we have to adjust. We want to list in that framework of our fishing. But our real answer may be something that

we don't necessarily have our hand on, which is some of that other mortality that I think classically how models work may be tied into fishing, but it's not fishing at all, it's more of an environmental factor. With that I'll let Karin take the microphone.

DR. LIMBURG: Okay, if I were to put on my hat and play John Waldman, John would say that the commercial fishery in the Delaware Bay should be looked at. He speaks from having studied the stock composition in the Delaware Bay commercial fishery. When he studied it, I think it was around 2010, 2011, something like that.

I think 40 some odd percent of the genetic composition of that stock was Hudson River origin. This also reminds me that this is another thing that might be driving the decline in the Hudson too. I noted in the Stock Assessment Report that there has been a follow-on study of the genetic composition of that fishery.

The proportion of Hudson River fish now is half of what it was when John studied it, so over something like maybe an eight-year time difference, there was a halving of the proportions in the Delaware. That could mean that the Delaware population has grown more, or it could mean that the Hudson population has shrunk. I think that it points to something that has got to be looked at more, in the case of the Delaware. I can't really comment on, I would have to go back and look at the statistics on the impact of recreational fishing versus the commercial fishing in the Bay. The recreational, correct me if I'm wrong, but I think a lot of it happens above the Bay, and the commercial mostly happens in the Bay, in that particular case.

MR. MILLER: Follow up, Mike?

CHAIRMAN ARMSTRONG: Sure.

MR. MILLER: You are absolutely right, Dr. Limburg. That recreational fishery is primarily in the riverine portion, and much less so in the

estuarine portion of the Delaware estuary. In fact, in the state of Delaware there is no main stem Delaware recreational fishery for American shad. That occurs quite a bit further upstream. In terms of the water quality. I would agree with Mike Bailey that that was a huge problem 30, 40 years ago. But I think we've come to grips with that problem over the years, and water quality is much less of an issue for the Delaware stock.

DR. LIMBURG: I agree.

MR. MILLER: In terms of Dr. Limburg's suggestion using John Waldman's data to look at commercial harvest in Delaware Bay. That is probably one of the few things that we could do, if we felt that that was potentially important. I'm not convinced that it is, but it's about all we can do to have any potential impact on that stock, but thank you for your thoughts on this.

DR. BAILEY: If I may add, I think there is some renewed focus on the Delaware. The questions maybe we're asking now or don't even need to ask now, by the time the next stock assessment comes up we may have a much better way to ask the right questions and get to the right answers.

CHAIRMAN ARMSTRONG: Emerson Hasbrouck.

MR. EMERSON C. HASBROUCK: Thank you Doctors Dailey and Limburg for your excellent presentations. My question is sort of relative to the issue that Lynn raised, in terms of what we can do here, how we can use this for management. In the review it was mentioned that there are five stocks where there is sustainable adult mortality, one of which was the Hudson River.

But then the Hudson River is also listed as depleted, and one of the comments was that it was depleted due to recruitment failure. Two-part question, I guess. One is, do we know what is driving that recruitment failure in the Hudson River? The second part is, is there really any stock recruitment relationship for shad in general, or in the Hudson River specifically?

CHAIRMAN ARMSTRONG: Mike, do you want to take a shot at that?

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DR. BAILEY: I think it's that river is in Karin's backyard, and I'll bump it off to Karin or Jeff to answer those.

DR. LIMBURG: This is Fisheries Science 101, I guess. I'm in the spotlight or in the hot seat. I wish that Wes Eakin could chime in. I see it as a couple things, one is the possibility that the staff being so low as they are right now are being affected by that commercial fishery in the Delaware. That is one issue.

That is not really recruitment that is the adults, but they are not being caught in the Hudson because the fishery in the Hudson is closed. But fish don't respect our boundaries, of course. The other worry that I have is the juvenile mortality from predation, by and large. That's just not very well assessed, and I think the managers know it.

Again, it's just a question of how many hours in the day are there. This will be a great thing, again to sponsor some students to study, and get more of a handle on it. Students are relatively inexpensive, compared to staff. That is one issue. Then I think the third is the threat of climate change and increased storms.

That is maybe a little bit more long term, but I have a P.H.D. student now, Chris Knack, who suddenly realized that when he did his Masters, and then was going on for his P.H.D. he was collecting data for the P.H.D. during a double back-to-back hurricane, you know hurricane Irene on top of Tropical Storm Lee that were three weeks apart.

They basically, although they weren't expecting spawning shad, because it was in late fall. It ripped up the habitat so badly that there was essentially a recruitment failure of spawning year. As those phenomena happen, again it gets back to how do you make those, when we think about things like habitat restoration, how do you make habitat, not only great places for the young fish to grow, or fish to spawn, and then the nursery habitat.

But also, how do you make them resilient? It's not just shoreline resilience for people, it's also habitat resilience for the organisms that live in those ecosystems. Getting back to your question about sustainable mortality. My comment was, again I just think it's bumping along at very low levels right now.

MR. KIPP: This is Jeff. If I could just jump in and add a comment. I think that the Hudson is a prime example of the caveat we've included in this assessment, which is we don't know juvenile mortality levels. The mortality estimates that we've put forward in this assessment are solely from the adult fish that return as spawners, and the decline in that age structure when they return to their birth spawners.

There is this big gap between when these fish are young of year in the river, and we do have actually some young of year surveys. Then when they leave and go out to the ocean and stay in the ocean, aside from some that might return, as Dr. Limburg noted. We just don't know what the mortality levels are.

There could certainly still be factors that are leading to unsustainable juvenile mortality. Even when they do return as adults and experience sustainable mortality, they've already been impacted to a degree, to where they're not going to trend towards a rebuilding stock, because of that high juvenile mortality.

MR. HASBROUCK: Then relative to the Part B of my question then, Jeff, based on what you just said. Am I to assume then there really is no stock recruit relationship with shad?

MR. KIPP: It may just be that there is an additional factor that we don't know if it contributes to that stock recruit relationship. You know the young of year may actually be tied to the adults. Yes, I'm not sure if it's just something that impacts those young of year, and that it is suppressing them from increasing in their relative abundance. Yes, I'm not sure I have a better answer for you.

DR. LIMBURG: Emerson, I think that there is probably not enough contrast in the data now to see that, because the population is so depressed, I mean at least in the Hudson. If you wanted to establish a stock recruitment relationship you might be able to do it in the Columbia River, which has the world's largest

population of American shad, there are over 7 million there. It's a wonderful system, but it's not here, and they've got lots of shad out there.

CHAIRMAN ARMSTRONG: We're way behind now. If we can get questions more towards whether we accept this as a package or not, the review and the assessment. In the coming meetings when we're talking about actions, and should we do it. I think we can get into the meat of it more.

These questions are important, and they are really good questions. But we're going to have to cut off questions in a little bit, and there are a couple of public comments we want to do. But back to the Board. We're discussing whether we should accept this. Toni, do we have more comments?

MS. KERNS: We do not have any more questions from the Board. We have three questions from the public that I'm aware of.

CHAIRMAN ARMSTRONG: Okay, and we'll do that by hand raising.

MS. KERNS: The first one is George Jefferson.

CHAIRMAN ARMSTRONG: Go ahead, George.

MR. GEORGE JEFFERSON: Hello Dr. Limburg, great presentation. You had mentioned the shad line in Delaware Bay, and I wanted to cite the Waldman et al 2014 paper. We know a mixed stock fishery exists in Delaware Bay, and we know the Hudson River shad are depleted.

Why isn't the line moved north to protect those shad of a mixed stock origin, or those with the Hudson River provenance? Then one more question if I may ask. With regard to the habitat model, looking at dams. The Hudson River didn't show so much impact from dams, but there was a 60 percent loss of shad spawning habitat to accommodate navigation. How is that accounted for?

CHAIRMAN ARMSTRONG: Mike, do you want to try those? You know the first question was a management decision. Do you want to comment on that, Mike?

DR. BAILEY: The first one I will not comment on. I think there are other folks who could speak better to that. To the second question about the habitat model. The habitat model was based very much on dams and accessibility. In the write up, we did include some discussion about we're not talking about water quality. We know there have been a lot of changes to habitat, there has been a lot of changes to submerged aquatic vegetation.

Those weren't covered in this kind of big 40,000-foot new model. We do realize some river systems have habitat degradation that is not dam related, and we weren't able to get at that at a coastwide level, so we didn't get to it, then the write up should reflect that. For the first question I am not familiar enough with it, and I know there were decisions made that I had no part of. Maybe someone else could answer that better.

CHAIRMAN ARMSTRONG: Well I think, George I don't think the person is sitting on a microphone right now who can answer that. But clearly there has been a lot of work since that line has been set in Delaware Bay. This may very well be part of an action that we can move forward over the next Board meeting or two, under the recommendation of the Technical Committee, which we will be discussing in a few minutes. I'll leave it at that. Next public, Toni.

MS. KERNS: We have Jim Cummins.

CHAIRMAN ARMSTRONG: Go ahead, Jim.

MR. JIM CUMMINS: Thank you, Chairman, for letting me speak, and I want to also extend my thanks to the Committee and the Peer Review Team for an excellent job. I was involved in the 2000 assessment, I know it is a lot of work, and I really appreciate what they've done. A little background for the Board members. I'm a retired biologist, since 2016, but I have a 31-year career focused on fisheries management.

I started a DC Fisheries Program in 1985, which I luckily am probably the only living person that started

such a jurisdictional program. Then from 1988 to 2016 I worked for the Interstate Commission on the Potomac, including working on shad restoration in the Potomac. I've done that since '95 onward.

I remember when the Potomac was really in bad shape. We were told we weren't even going to find enough shad to start Potomac origin fry upstream of a modified dam. We couldn't beg, borrow or steal any eggs from anybody else, until we went out in the river, I got a Virginia waterman to help me out, and we successfully had a restoration from 1995 to 2002.

Then the Potomac became the river of brood stock for the Susquehanna, for Maryland Rivers, and for the Rappahannock River. I've seen a river change from nothing to really good, and I have to disagree a little bit with the conclusions on Page 227 that the Potomac stock is currently experiencing unsustainable mortality.

I will agree there has been somewhat of an abundance plateau in the population over the last four or five years, but the longer-term trend over the last 25 years has been strongly upwards. I support the Peer Review Panel's recommendation that the data quality issues are such a concern that the output for the current model should not be used to provide estimates for management purposes. One other factor to consider is the ocean predation and bycatch mortality. Again, with the Potomac as a good example, it's pretty much it's an undammed river now. It's got good habitat. It should be really increasing a lot, but we've reached a plateau.

I think a lot of that is due more to what's going on in the ocean with predation. There are few rivers coastwide, sadly that are doing as well as the Potomac. When the Potomac population is out in the ocean they are being heavily preyed upon, and probably in the bycatch there is a disproportionate number of Potomac shad that are taken in the bycatch fisheries too.

Still for over 15 years in my annual reports on the shad project I noted that. You know in order for the Potomac or any shad population to do well, it's really reliant on the whole population of shad up and down the coast doing well, because we have such low numbers. They are being heavily preyed upon.

The importance of shad in restoring other fish could also be mentioned. I mean at one time when the shad were really abundant, and other fisheries were doing well. You know we don't have that any more, it's really impacting other fisheries. Spencer Baird mentioned in 1877 report that the demise they were seeing of the cod was linked to the lower numbers of shad and herring that were, because of the damming of the rivers at that time.

It's important to keep that in mind too. But I do think the Potomac model and these advancements are really great. I liked the report in general. I would mention that I think it is actually time to open up the recreational fishery in the Potomac, which has been closed since 1983. With the recreational fisheries closure, the attention and care for the fishery really went south.

Not only did the shad become very rare, it became the forgotten fish. I am an advocate for a very light reopening of the recreational fishing, which is primarily in the District of Columbia, and letting a few fish be taken by those anglers, to keep up the concern for the fish. That is about what I have to say.

The blue catfish, I have long worried about that, because I was witnessing the Maryland and Virginia folk coming out and collecting the blue catfish in the spring for their stomach content analysis, while we had four different agencies out collecting shad for brood stock. At the end of the evening, since there wasn't anything we could do with those squished up fish, we cut them up and threw them overboard.

Some of the data on the blue catfish consumption of shad, even though it's light, it might have been part of it could have been due to the availability of freshly killed shad. I mentioned to Marty that one of the potential management measures we could take is we currently have a 10 percent replacement stocking on all these programs that are taking fish out of the

Potomac for stocking in other rivers. We could increase that percentage to 15 or 25 percent, as a measure to help reduce the impact on the Potomac fishery. With that I'm finished. Again, I think the Potomac population is recovering. I thank you for this assessment, and for ongoing and future American shad restoration efforts, which are sorely needed. Thank you.

CHAIRMAN ARMSTRONG: Any more public questions, Toni?

MS. KERNS: We have one last question from the public, Des Kahn.

MR. DESMOND M. KAHN: I appreciate the chance to pop this question. I'm going to start with a question, and then I'm going to give the rationale. The question is, when if ever will the Commission conduct a serious investigation of the predation impacts of our unprecedented abundance of striped bass on other fisheries, including primarily but not exclusively, shad and river herring? When will that happen?

The Commission has studiously ignored this question, and as an example, in the 2007 America shad assessment, two of the premier, actually the top experts in the world on American shad, which was Dr. Victor Crecco and Tom Savoy of the Connecticut DEP published more peer reviewed papers combined than anyone by far on American shad.

Submitted their report on the Connecticut River, and documented extensively how the formerly booming American shad and blueback herring run up the Connecticut River virtually declined and almost disappeared, at least in the case of herring, as stripe bass rebounded in the 1990s into the 2000s.

They submitted this report as the Connecticut Report. It was suppressed under the former director, it was suppressed. It was retained only as a minority report in the 2007 stock assessment. They have also published a peer reviewed paper to this effect. I believe it was in the Connecticut River (broke up).

Now, the subsequent, I believe to that assessment. Connecticut hired a team from the University of Connecticut to do a diet study on striped bass in the Connecticut River, and Justin Davis, who spoke earlier, was the primary person along with Eric Schultz. They documented by stomach content that the largest 10 percent of striped bass in the Connecticut River were eating adult shad in the spring.

The other 90 percent were eating herring, primarily blueback herring. Now, this does not talk about striped bass predation on juvenile shad. This is just on adults. After that, I was working in 2011 on the stock assessment of the Delaware River. I took Roy's former place on the Delaware River Official Wildlife Coop Committee.

I figured since they saw this in the Connecticut, I would look at the Delaware. I plotted the abundance indices of American shad in the river and striped bass in the waters of the Delaware. My jaw hit the floor. There was an unbelievable negative correlation between the two. In the eighties when bass were in the tanks, American shad in the Delaware River were booming.

Up in Pennsylvania, New Jersey there was a recreational fishery that was very strong. Hundreds of thousands of pounds of American shad were being landed by commercial fishers in Delaware Bay at the same time, and yet when striped bass increased in the nineties, that run declined. When bass peaked in the 2000s, American shad were so low that the managers were alarmed. Since then, when bass have declined some, being that the shad is going up. This chart is in an essay I submitted to the Striped Bass Board.

CHAIRMAN ARMSTRONG: Dan, are you near the end? I'm going to have to stop you. You started with a question, which I imagine is rhetorical.

MR. KAHN: No, the question was. (Broke up) That's my question. What?

CHAIRMAN ARMSTRONG: As you well know, there isn't an answer. We don't know that. But we heard from both Karin and Mike time and time again what can be put in as environmental effects, and they talk

about it. Your point is not lost at all. I don't think this is the time, we don't have time to talk about it. But I appreciate you raising it, and it's absolutely an important point. Thank you, Des. Toni, are we done with the public?

MS. KERNS: We have one member of the public that had not asked a question yet, and now he has taken his hand down. There it is, his hand is back up. This would be the last question from the public. Seth Amgott.

CHAIRMAN ARMSTRONG: I know this is probably about the Potomac. If it's redundant to what Jim's very eloquent talk, could you keep it maybe very short, because we're really behind at this point?

MR. SETH AMGOTT: Yes, Mr. Chairman. Thank you for your time. I just wanted to thank the staff for tremendous and impressive work. I particularly appreciate highlighting Jeff Kipps work on the Potomac model, and highlighting the impact of the brood stock removals. It seems to me that advocates and anglers like myself have some work to do with our representatives on the Council in that regard, and making sure that those removal programs are the high-quality programs that they should be, given that they are accounting for mortality.

I do support a limited recreational harvest of American shad. We have work to do until DC and the PRFC come to you with that proposal. Until then, thank you very much for the assessment. I did promise to be brief. Thoreau wrote in 1845 of the effect of dams on the anadromous fish. Who hears the fishes when they cry? Thank you for hearing.

CONSIDER ACCEPTANCE OF BENCHMARK STOCK ASSESSMENT AND PEER REVIEW REPORT FOR MANAGEMENT USE

CHAIRMAN ARMSTRONG: Going back to the Board. We're now considering acceptance of the assessment and the review, and we sort of meshed. The comments have been to that. We

can take some more comments on the relative merits of accepting it or not. But I would like to get a motion if I could, to accept the assessment and the peer review for management use. Would someone like to make that motion?

MS. KERNS: You have Pat Keliher.

CHAIRMAN ARMSTRONG: Pat, are you making that motion?

MR. PATRICK C. KELIHER: I would be happy to, Mr. Chairman. I would move that we accept the Benchmark Stock Assessment and Peer Review for management use.

CHAIRMAN ARMSTRONG: Thank you, do we have a second?

MS. KERNS: You do, Cheri Patterson.

CHAIRMAN ARMSTRONG: Cheri Patterson seconds, excellent. Pat and Cheri, I'm guessing you don't need to justify why you did that. Any discussion on this? Any hands, Toni?

MS. KERNS: No hands.

CHAIRMAN ARMSTRONG: No hands, so it would always be easier in this format to do it by consensus. Is there anyone who would vote against this, and do we need to caucus? Any hands, Toni?

MS. KERNS: No hands.

CHAIRMAN ARMSTRONG: All right, seeing none I am going to declare this motion accepted by consensus. All right excellent, and thank you all involved, the Review Committee and the Assessment Committee, awesome work.

CONSIDER MANAGEMENT RESPONSE TO THE ASSESSMENT AND PEER REVIEW

CHAIRMAN ARMSTRONG: We've got a lot of work to digest this and move on with the responses to it, which is the next agenda item. Clearly in my mind we don't have enough information, nor enough time to craft specific responses by this Board to what's in that.

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What I would like to do is consider charging the Technical Committee with coming up with a suite of responses, and these could be for individual stocks that are not sustainable or depleted, or coastwide actions also that could relate to improving data collection, et cetera, et cetera. Caitlin, could you help me out here? Is that appropriate to charge the Technical Committee?

MS. KERNS: Mike, I just wanted to let you know Pat Keliher has his hand up.

CHAIRMAN ARMSTRONG: Pat, would you like to weigh in?

MR. KELIHER: I agree, it is really tough at this late hour of the meeting to get into a lot of details, but I do think it would be appropriate to task the TC and the PDT with identifying potential paths forward. If it pleases the Chairman, I would be happy to make that motion.

CHAIRMAN ARMSTRONG: It pleases me immensely.

MR. KELIHER: With that, Mr. Chairman, I would move to task the TC and the PDT with identifying for the Board potential paths forward, to improve shad stocks, given the results of the stock assessment.

MS. KERNS: I believe Emerson Hasbrouck is seconding that motion.

MR. HASBROUCK: Yes, I'll second it.

MS. MAYA DRZEWICKI: Could you repeat the motion, please?

MR. KELIHER: Sure, task the TC and the PDT with identifying for the Board potential paths forward to improve shad stocks, given the results of the stock assessment.

MS. DRZEWICKI: And who is the second?

CHAIRMAN ARMSTRONG: Emerson, I believe. If not, he is now.

MR. HASBROUCK: Yes.

CHAIRMAN ARMSTRONG: Would either of you like to comment?

MR. KELIHER: I think it's clear from the stock assessment there are a lot of areas of concerns as it pertains to this species. I certainly appreciated the fact that there is an emphasis on habitat, and the need to access habitat. That certainly has been our focus here in the state of Maine, and we're seeing the benefits of that work. I think it's time to kind of roll our sleeves up when it comes to the species, and really start to look at what we can do to make some additional changes going forward.

MS. KERNS: Mike, you have Emerson and then Roy Miller.

CHAIRMAN ARMSTRONG: Okay, Emerson.

MR. HASBROUCK: I thought my hand was down. My hand was up to second the motion. I don't have anything to add beyond what Pat has already mentioned.

CHAIRMAN ARMSTRONG: Roy Miller.

MR. MILLER: For the maker and seconder of the motion. I just wanted to clarify that that advice to the TC and PDT, is that with the assumption that they will be making river-specific recommendations for paths forward, rather than a generic list of things that can be done? Because the river-specific recommendations would be much more helpful, and that is sort of obvious, but I wanted to make sure that that was the intent of the maker of the motion.

CHAIRMAN ARMSTRONG: I would think it is, but do you want to refine it to reflect that?

MR. KELIHER: That certainly was my intent, Mr. Chairman, but I didn't go into that level of specificity, in case there are some other areas within management that need to be looked at, kind of from a

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regional aspect as well. I left it a little bit broad to give them some flexibility.

CHAIRMAN ARMSTRONG: Sure.

MR. KELIHER: I completely agree with Roy's thinking around river specific. If we're not really having some detailed focused efforts on a river by river basis, we're never going to get to the point we need to with this species.

CHAIRMAN ARMSTRONG: Right, but there also may be some coastwide things, you know like the need to move to otoliths and things like that we need to capture also. Toni, do you think this is specific enough? Toni and or Mike Bailey, or Caitlin.

MS. CAITLIN STARKS: Yes, this is Caitlin. I think that this is clear enough that the Technical Committee, so we normally don't have the PDT unless an action is initiated, so I guess you could start with the Technical Committee developing some recommendation, and depending on those recommendations move forward with a PDT looking at them. Does that sound appropriate?

CHAIRMAN ARMSTRONG: We would have to meet again before we task the PDT, is that correct?

MS. KERNS: Correct. It would be TC and staff that you would identify potential paths forward, but usually just the TC. You broke up a little right there, Mike.

CHAIRMAN ARMSTRONG: I said would it be better if Pat perfects this motion and gets rid of the PDT in it?

MR. KELIHER: Sure.

MS. KERNS: Maya, please delete and the PDT. Thank you.

CHAIRMAN ARMSTRONG: The motion is, move to task the TC with identifying for the Board potential paths forward to improve shad stocks given the results of the stock assessment. I've

heard that that is sufficient to cover Roy's concerns, and maybe some of my concerns, broad based things that we could conserve. Comments on the motion.

MS. KERNS: You have Lynn Fegley.

CHAIRMAN ARMSTRONG: Lynn, go ahead.

MS. LYNN FEGLEY: I just wanted to clarify that this is different from the research recommendations that are thoroughly listed in the assessment reports. I don't know if this needs to be specified in the motion, but I'm assuming this is really paths forward, in terms of functional management items.

Rather than things that could be done to improve our state of knowledge, which is a path forward for improving the stocks. I just want to make sure we're delineating, kind of for the Technical Committee, sort of researched study work that needs to be done from a management path forward.

CHAIRMAN ARMSTRONG: It's more complicated than it sounds. I think the former. This is, we're looking for management actions that need to be done, but I think if the TC identifies a research need, like all states move to using otoliths for aging. Then that could be put into an addendum or some sort of action as we see fit. I think it's geared, and staff can correct me. I think it's geared towards management actions that we can take to address issues in assessment. Does that answer your question, Lynn?

MS. FEGLEY: Yes, it does, thank you.

CHAIRMAN ARMSTRONG: Any other hands, Toni?

MS. KERNS: Those were all your hands from the Board. There is one member of the public that has had their hand up.

CHAIRMAN ARMSTRONG: Okay, I'm not going to take any public comment at this point. I think we're going to move to see if this is by consensus, we can approve this. Is anyone opposed to this motion?

MS. KERNS: I do not see any hands.

CHAIRMAN ARMSTRONG: Seeing none, this motion passes by consensus. At this point, well we're scheduled for a break, and could we take a five minute, literally just five minutes for a biological break, and start again at 11:15.

MS. KERNS: Sounds good, Mike.

(Whereas a recess was taken.)

**CONSIDER STATE PROPOSALS TO RESOLVE
INCONSISTENCIES WITH
AMENDMENTS 2 AND 3**

CHAIRMAN ARMSTRONG: Toni, are we ready to resume?

MS. KERNS: Sure are, thanks, Mike.

CHAIRMAN ARMSTRONG: All right, looking at the radar image I see New Jersey and Delaware, you are in the belly of the beast right now. I think we've lost a few people off the line.

**PRESENTATION OF STATE PROPOSALS AND
TECHNICAL COMMITTEE RECOMMENDATIONS**

CHAIRMAN ARMSTRONG: The next is the Technical Committee Review of the State Proposals to Resolve Inconsistencies with Amendment 2 and 3, and that will be presented by Ken Sprankle, he's the TC Chair. Go ahead, Ken.

MR. KEN SPRANKLE: Okay, thank you, Mr. Chairman. Good morning everyone. This presentation this morning will be shared by Caitlin and myself. I'm going to start by covering the Board charges, the TCs work and approach on those, and the TCs recommendations. Caitlin will cover later on how the TC recommendations relate to the existing FMPs for both shad and river herring, to help with any discussion.

Our presentation is going to start with some background information; the TCs recommendations. Those had been presented originally back at the October 2019 Board meeting. We'll follow that by the TC review of

the state proposals that were directed for development by the Board. Those are going to include plans for Maine, New Hampshire, the Delaware River Basin Cooperative, the state of Delaware, North Carolina, South Carolina, Georgia and Florida. We've got a lot to cover, we'll cover them quickly, but hopefully thoroughly. The Board can then decide on actions, and we'll end with remaining tasks for the TC. I'm just going to remind folks, as many are aware that both Amendments 2 and 3 require all states and jurisdictions to submit sustainable fish management plans for all systems that remain open to river herring and shad harvest, either recreational or commercial.

The catch and release fishing can be permitted on any river without an SFMP. In the amendments they state that specifically SFMPs must demonstrate fisheries are sustainable with quantifiable sustainability metrics and annual monitoring. Sustainability is defined as, will not diminish future stock reproduction and recruitment.

I want to also note that both amendments also describe an alternative management regime option that may be proposed for Board approval. That is further defined as, if the proposal has the same conservation values that the measures contained within the amendment. In October 2017, the TC identified inconsistencies between state management programs and FMP requirements for both Amendment 2 and 3.

The Board then tasked the TC to develop recommendations to address them. Some examples of these inconsistencies included tributaries or river systems that have SFMPs and monitoring, but where tributaries are not explicitly addressed. Second, rivers open to harvest in an SFMP, but with no monitoring to address sustainability, and lastly the third one, rivers open to harvest without an SFMP and/or monitoring, but where little to no harvest is suspected.

Again, in October 2019, the TC presented a report on these inconsistencies, and recommendations for resolving each issue. At that Board meeting the TC was requested to have the states submit proposals to resolve inconsistencies consistent with the TC recommendations. The TCs recommendations for these inconsistencies included three options.

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The first one I have shown here is catch and release only regulations. Those are for systems with no plans that appear to have the most clear-cut option, and it was also sustainable, of course. Catch and release regulations have been implemented by most states without SFMP metrics. Another option would be application of sustainability metrics for monitored systems, and that is where sustainability metrics can be applied to a broader geographic area for unmonitored areas.

The Amendments speak to the fact that state wide and metrics may be used. Lastly, we have the alternative management regimes that I mentioned. The TC considered this option may be appropriate for systems with no known harvest. I'm going to review now some of the summarized elements of the proposed individual state plans.

The state of Maine has an existing approved river herring SFMP. The issue was the state wide 25 fish recreational bag limit, with limited monitoring. The state proposal includes updating the SFMP to manage all rivers in a region based on fish weight counts as a sustainability metric from five fishways across the state.

Those fishways include the first, these are all first. The Saco River, Androscoggin, Kennebec, Penobscot and St. Croix. For folks not familiar with Maine, that is spanning sort of south to north in a northward direction across their coastal river systems. The 25th percentile, the fishway count mean will be used for each fishway as a management benchmark trigger. That is for each fishway, with management actions applied on a regional basis, just based upon the geographic area located between neighboring monitored areas, if the metric falls under the 25th percentile for three consecutive years.

The mean annual count of all fishways will also be used, with the 25th percentile benchmark trigger, and that is also a three-year consecutive

basis. If that was tripped that would cause a statewide management action. The TCs recommendation is support approval of this SFMP update.

The state of Maine currently has no approved SFMP for American shad. The issue is a statewide 2 fish recreational bag limit. The state has proposed a new American shad SFMP that will use statewide applied sustainability metrics based on annual fishway counts from five fishways, and also a JAI value for the Merrymeeting Bay.

Merrymeeting Bay covers Kennebec and Androscoggin, two major river systems flow into it. The five fishways that are used, also sorting out south to north will be the Saco, Androscoggin, Kennebec, Sebasticook, and the Penobscot Rivers. Again, the 25th percentile value from the data time series is going to serve as the trigger for the JAI, and also for the individual fishway annual passage counts.

Three consecutive years below the 25th percentile will trigger a management response. Because they have both fishway counts and the JAI, if only one of the data types, either JAI or one or more of the fish counts meet the trigger, the recreational limit would be reduced to 1 fish. If both the JAI and one or more fish ways are below the trigger for three consecutive years, then the action would be to move to catch and release only. The Technical Committee recommendation is support of approval of the new SFMP.

The state of New Hampshire has an approved river herring SFMP. The issue was a lack of monitoring on the Salmon Falls River. That is a shared waterbody with the state of Maine. The state has proposed to update the SFMP with language that identified the Salmon Falls River as included in the existing Great Day Sustainability Metric, with the same subsequent management actions applied based on triggers.

We're going to talk about those in a moment. The TC recommendation is support of approval of the updated SFMP. We also learned back in the early spring the state of New Hampshire had a concern with the compliance, based on their defined management action from a trigger sustainability metric.

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The management threshold for their river herring SFMP is 75,450 river herring passed among their Great Bay monitored fishways. That was not reached in 2019, which should trigger a closure for 2020. Back in the spring the state provided the Board with a letter, and also discussed with the TC the issues surrounding reaching that trigger.

Cheri Patterson, again submitted a letter, it's dated April 7, about how they fell under the three-year running average that would trigger the benchmark management action, and the issues associated with that. As I said, Mike Dionne, he's a TC member from New Hampshire, he met with the TC, and we discussed that there are several different causes for that, including some concerns with the multi-tool fish counter, low water temperatures, and a dam removal and habitat use occurring downstream of one of the fishways.

The New Hampshire River Herring Plan states that if the three-year running average benchmark of the Great Day Fishways fall below the threshold, they institute a fishery closure. In April that letter again requested the fishery remain open in 2020, given their explanation of the issues and plans to take steps to address them.

The TC recommendation based upon that original letter was to support the approach of requesting Board exemption from their SFMP benchmark trigger, given the variables impacting the counts in 2019 for the 2020 season. Now Caitlin and I also communicated with New Hampshire Fish and Game for an update, and Cheri Patterson has recently submitted a letter to the Board. That letter is dated 7/30, has not been reviewed by the TC.

The recent letter to the Board restates the request for the 2020 fishery to be open, with a planned closure for the fishery in 2021, due to the second year of being below their threshold trigger, based upon 2021 count data. The Delaware River Cooperative has an approved

shad SFMP. The issue was tributaries that were not identified in the plan.

The Co-op plan has been revised to identify tidal reaches of rivers in both New Jersey and Delaware, and the Technical Committee recommendation is to support the proposed revision to clarify its system tributaries in the plan. The state of Delaware does not have a state-specific SFMP plan for shad.

They also have an issue with allowing recreational harvest in tributaries to the Chesapeake Bay. The Delaware proposal is to implement catch and release regulations for all Chesapeake Bay tributaries, which is expected to be processed by end of this calendar year. The TC recommendation is support approval with the regulatory changes consistent with Amendment 3. The state of North Carolina has an approved shad SFMP.

The issues were tributaries that are not included in the plan, and also no monitoring and no SFMP for the Little River, which is a shared waterbody with the state of South Carolina. The states revised their SFMP to identify, incorporate tributaries in the SFMP, and also include the Little River, stating that system will be managed consistent with the South Carolina SFMP that includes that system in the Winyah Bay for its sustainability metrics and management actions.

The TC recommendation is to support approval of the proposed SFMP update. The state of South Carolina has an approved river herring sustainable fish management plan. The issues for the river herring include tributaries of open systems not identified in the SFMP, and recreational harvest that is open in systems without an SFMP.

That includes the Little River, Wando, Ashely, the ACE Basin, Coosawhatchie, and the Savannah River. The state proposal is to update the SFMP to include the tributaries of monitored systems, and those include updates to all the tributaries of the Winyah Bay in the Santee-Cooper system are identified, and the Little River will utilize the PD metric and management response. In addition, the state proposes to use an alternative management plan for unmonitored systems that are open to recreational harvest. Those

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systems include the Wando, Ashely, ACE Basin, Coosawhatchie, and Savanna River.

I'm just going to note here that we have three South Carolina plans to summarize here, so the TC recommendations are going to follow after we cover all of these. The South Carolina Alternative Management Plan includes the ACE Basin and the Coosawhatchie and Savannah Rivers. The plan describes that South Carolina is unaware of any recreational fishing for river herring in these systems, that includes using MRIP data.

Commercial fishing is not allowed in any of those waters. Their plan describes river herring as functionally absent in these areas, and provides data from fishery independent surveys that include two shad young of the year electrofishing surveys, that are annually conducted in both the Edisto and Savannah Rivers.

The plan notes that a total of 28 juvenile blueback herring have been collected over 10 years of these surveys. The plan also notes that Georgia DNR has a 10-year spring adult shad electrofishing survey that is conducted below the first barrier on the Savannah River that also supports their position.

Their plan includes changes to regulations or development of an SFMP. If any survey detects a positive recreational harvest for three consecutive years, positive was defined as the most conservative. That would just be a single observation for count. They also note the fishery independent and fishery dependent surveys are also planned to continue, and the annual survey results are to be reported in the annual compliance report.

Lastly, the state of South Carolina has an approved shad SFMP. The issue is that tributaries are monitored systems, and are not included in the SFMP. The state proposes to link tributaries to monitored systems with sustainability metrics, and the system

definitions are consistent with those in the river herring SFMP.

The TC recommends supporting approval of all three South Carolina proposals, the River Herring SFMP Update, the River Herring Alternative Management Plan, and I'll remind you again that that includes the TC request that all available monitoring data mentioned in the plan are to be submitted annually with the compliance reports. Then lastly, it recommends approval of the Shad SFMP Update as well.

The state of Georgia has an approved shad SFMP. The issues are unmonitored river systems in the plan, and the sustainability metric for the Savannah River, which is no longer considered viable by Georgia. The Georgia SFMP proposal updates the tributaries that are covered by systems, and it also applies the Altamaha metric and benchmark to other systems with insufficient data, specifically the St. Mary and Satilla Rivers.

Only the Altamaha and Savannah River allow both recreational and commercial fisheries. The other systems are recreational only. The Savannah River has had its commercial shad fishery decline consistently, to the point where the use of commercial netters sustainability metric is unreliable. The Georgia proposal is to use an ongoing ten-year fishery independent spring electrofishing survey. For adult shad it's conducted below the Army Corp Bluff Lock and Dam facility. Georgia proposes to use the annual CPUE data, relative to a 25th percentile value for the data time series of benchmark trigger.

That would trigger management action if below for three consecutive years. The Altamaha sustainability measure is a Georgia fishery independent gillnet CPUE with a benchmark trigger of three consecutive years falling below the 25th percentile. The TC recommendation is to support approval. The state of Georgia has no SFMP for river herring.

Commercial fishing for river herring is not allowed, but recreational fishing is unregulated. The state proposes an alternative management plan for systems statewide that would maintain no commercial fishing, and for recreational fisheries to remain unregulated.

State plan notes that there are no landings records for river herring, and there is no known directed recreational effort for river herring.

The plan describes river herring as functionally absent from systems, and provides data available from both fishery independent and fishery dependent surveys. In Amendment 2, under monitoring table requirements, Table 15 and 16, it states; there are currently no known river herring populations in Georgia.

Should populations be established, the management board has the authority to require a fisheries independent monitoring program be implemented. That was from one of the tables, the other one of course would speak to fishery dependent monitoring. Some examples of some of the data that were cited included DNR annual creel surveys in the Altamaha, and that is a survey that is conducted from April through November that has shown no records for river herring harvest.

On the Ogeechee a creel survey is conducted every five years, and that occurs from February to June, also no records shown there. They've also looked at MRIP data that shows no harvest records as well. In terms of fishery independent data, that includes the Savannah River adult spring shad fishing survey I just mentioned.

That survey has produced a total of three reported river herring over the data time series. The plan also sites a spring electrofishing survey in the Ogeechee for adult shad. It has not observed any river herring. Other rivers in the state have rotational electrofishing surveys that have not observed any river herring.

They have juvenile index seine surveys for shad that are also conducted from July to September in the Ogeechee, Altamaha and Savannah River, and they've had limited river herring captures. Since 2011, a total of 13,300 juvenile shad have been collected in those surveys, with a total of 267 blueback herring captured in those surveys as well.

The proposal notes Georgia will continue with the described fishery independent and fishery dependent surveys, and they will provide data for monitoring in their annual compliance reports. If they detect any positive recreational harvest in any survey in any single year, they will investigate to see if additional data collection is warranted. If a positive harvest is detected for three consecutive years, Georgia will take steps to ensure sustainability for that river system. They note in the plan that no fishery independent data will be used at this time as part of their plan. The TC recommendation is support approval with annual monitoring data provided in compliance reports.

The state of Florida has a shad SFMP. The issue include that the tributaries of the St. Johns River were not identified. The St. Johns is the only system identified in the SFMP, although there are statewide Alosa recreational harvest regulations. The state proposed to update the shad SFMP and include the tributaries of the St. Johns, and a TC recommendation is support approval of this update.

Florida proposes an alternative management plan to address the potential recreational harvest of river herring statewide, and shad outside of the St. Johns River. The issue is again a statewide 10 fish recreational limit on Alosa species, with no SFMP for river herring or shad outside of the St. Johns River.

The proposal is an alternative management plan that will maintain existing regulations. The plan reviews the lack of any credible data reports for any river herring or shad harvest outside of the St. Johns River. There are also no fishery independent data to support river herring or shad occurrence outside of the St. Johns River Basin.

The alternative management plan will continue to examine and monitor both shad and river herring, both fishery independent and fishery dependent surveys in the St. Johns, and Florida will coordinate with Georgia for any survey data for the St. Mary's River, a shared water body. Florida will also monitor MRIP data for both species.

If any positive harvest detection occurs for three consecutive years, Florida will initiate a process to demonstrate sustainability for that system. If it

cannot, regulatory changes will be enacted. The TC recommendation is support approval, and as with the other alternative management plans, any monitoring data for these species in any system will be provided annually in a compliance report. With that I'm going to let Caitlin take over, and she will cover these remaining slides.

MS. CAITLIN STARKS: Thanks, Ken. I switched the order of the slides a little bit from the overview, so sorry if that was confusing. But before we get into what the Board actions are to be considered today, I did want to go over what the TC is up to, in terms of developing recommendations for the remaining items from the original Board task related to improving Amendments 2 and 3, in the five areas that are listed on this slide.

The current plan is that the Technical Committee had formed a subgroup, which is a smaller task group that is focusing on developing draft recommendations, and they are continuing to meet, and will present those draft recommendations to the full TC. Then the TC will finalize recommendations to be presented to the Board at a future meeting. You'll note here that the de minimis issue is crossed off, because it's already been resolved. That was presented at the last meeting. Those remaining four items are what the TC will be developing recommendations are, in terms of potential modifications to the FMP to help with some of these issues. In terms of the Board action for consideration related to this agenda item. Today the Board may consider approval of the state proposals that were presented, and secondly consider approval of the request from New Hampshire for an exemption to their SFMP requirement to close their river herring fishery in 2020.

Despite having fallen below that sustainability threshold, which again they assert is due to technical issues with their fish count, and other explanatory variables, rather than true fish passage concerns. To help with the first Board action related to approving the state proposals.

This table is summarizing all of the proposals that were submitted from each state that we've gone over today.

I highlighted in bold the proposals for the alternative management plans from South Carolina, Georgia, and Florida. Just because I think the Board may want to have as kind of separate, or focus discussion on these, since they're a bit different from what we are used to with the SFMPs. This is my last slide before questions and Board discussion.

But I think it would be helpful to give a reminder of what Amendment 2 provides, in terms of guidance on the alternative management regime for Alternative Management Plans. Amendment 2 says that these plans must demonstrate that the proposed management program will not contribute to overfishing of the resource, or inhibit restoration of the resource, and that they must show to the Board's satisfaction that the alternative proposal will have the same conservation value as the measures in Amendment 2.

That to me seems to reference the requirement to implement catch and release only regulations, in the absence of assisting a whole fishery management plan. When the Board is considering the three alternative plans today, I think an important question to keep in mind is, does the plan meet these two criteria or not. That is the end of our presentation, and Ken and I can take any questions.

CHAIRMAN ARMSTRONG: Any questions from the Board, Toni?

MS. KERNS: None I see yet.

CHAIRMAN ARMSTRONG: Based on Caitlin's advice, I think we probably have three motions we would like to make, just so we can have a little bit of discussion on each, and one is a motion to accept the sustainable fishery management plans and any amendments.

They made one motion to approve the alternative management plans, and then consider the request by New Hampshire separately, of which I think Cheri has a motion. Any broad questions? I don't think at this point any state has to defend what they've put out,

unless they are attacked, of course, which you know may happen. Toni, seeing any questions?

MS. KERNS: No hands are raised.

CHAIRMAN ARMSTRONG: Would someone like to make a motion to accept?

MS. KERNS: Chris Batsavage did just throw up his hand. I'm not sure if it's for a motion or a question.

CHAIRMAN ARMSTRONG: I'm sorry, who was that?

MS. KERNS: Chris Batsavage.

CHAIRMAN ARMSTRONG: Chris Batsavage, go ahead.

MR. CHRIS BATSAVAGE: Actually, a question on the Alternative Management Plans, questions for Ken. If I understand correctly, the South Carolina and Georgia mainly, and I guess Florida too will be looking at a recreational survey such as MRIP, and other creel surveys to detect any positive harvest over a three-year period, to see if they need action.

Was there any discussion by the TC over river herring being a very rare event species in any of these surveys, so they may not pick up any positive harvest, and also that MRIP doesn't cover the range of where river herring might be harvested by recreational fisheries in these rivers?

MR. SPRANKLE: Hi, thanks for your question. Yes, we certainly did discuss this thing. As you pointed out, the MRIP geographic range is limited to a couple areas. Folks are acutely aware of that. In terms of the recreational creel surveys, we didn't get into specifically what their creel clerks are asking.

I guess the assumption was that as a creel survey they would be detecting whatever was angled, what species were angled. You know again, the limitations of MRIP were understood, and then depending on which state you're

talking about, there were other additional roving surveys that I mentioned for some of the states that occurred, that they felt would provide some ability to detect a positive occurrence.

CHAIRMAN ARMSTRONG: Okay, does that answer your question, Chris?

MR. BATSAVAGE: Yes, that will work, thanks.

ADVISORY PANEL REPORT

MS. STARKS: This is Caitlin, I would just like to cut in one second, Mike. Before we take motions and we continue with questions, but **we do have an AP Report that needs to be presented, so just letting you know.**

CHAIRMAN ARMSTRONG: All right, so why don't we move right into that.

MS. PAM LYONS GROMEN: Okay Caitlin, this is Pam. Should I go?

MS. STARKS: I think you're all set.

MS. GROMEN: Thank you, Mr. Chairman, members of the Board. It's a pleasure to be with you, albeit virtually. It's been a while since we've had an AP meeting, so I'm glad to present our report today. Our Advisory Panel met via webinar and conference call on April 8, to review the state proposals for resolving the inconsistencies with Amendments 2 and 3. Materials that we used for our meeting is we had a March 17 memo summarizing the state proposals, and the TC recommendations. Also, we were given well in advance of our webinar the proposals submitted by Maine, New Hampshire, Delaware, North Carolina, South Carolina, Georgia, and Florida, and we were sent those again electronically, so we had plenty of time to review those.

We had six AP members attend the webinar, representing Maine, Massachusetts, New York, New Jersey and North Carolina. I'll just say that six actually represents 50 percent of our AP membership, and so we do have some states where we do not have representation currently on the Advisory Panel.

Since I have the microphone, I'll just do a plug for getting some representatives to join our panel. Then the AP did provide comments on the individual state proposals, and also the TC recommendations regarding the additional improvements to the FMP. There was general agreement among the AP members to support the TC recommendations for approving both the state plans and the FMP. Seems to be somebody needing to mute there.

There was general agreement among the AP members to support the TC recommendations for improving both the state plans and the FMP as a whole. A question was raised about whether catch and release mortality rate estimates are available, as this is certainly important to consider if we're encouraging catch and release of recreational fisheries without a sustainable fishery management plan.

There was one member who expressed concern about the South Carolina plan, and why there was not data available in the proposal we saw after 2015. Since then there was additional communications that explained that that has to do with the sustainability metric that's used. We understood that, but just would have like to have seen more recent data.

Then for Georgia and Florida there was a concern raised by an AP member that the aggregate creel limits may pose issues, because the *Alosa* species are not easy to distinguish, and that education should be provided to anglers to differentiate between the species. The Alternative Management Plans or regimes, as discussed earlier they actually sparked a pretty robust discussion among our AP.

Again, these are alternative management programs are for rivers or river systems without a sustainable fishery management program. But they are not requiring catch and release for recreational fisheries. This is primarily for river herring. One member felt that rather than moratoriums for rivers without sustainable fishery management plans, a small personal

harvest should be permitted for recreational fishermen.

Another member added that he would be in favor of this if it was biologically possible. Other AP members were concerned that the alternative management programs were not consistent with the goals of management, or fair to other states that have implemented required catch and release regulations, and as one member summarized, the idea of the fisheries being open, unmanaged, and uncounted seems problematic. Our AP member from New York relayed that fishermen in his state understood the closures, because they were concerned about the resource. There is a need to rebuild before we consider how many fish people should be allowed to take. Our AP member from Maine explained how they are leveraging the desire of some communities to take fish in order to restore the resource. He said the TC could recommend that some fisheries be reopened if more data is collected, and that this could fill data gaps along the coast. This led to just some general overarching comments. There is a connection between personal harvest and stewardship that should be recognized, and this was a big theme of our discussion.

Historically, shad and river herring were culturally important, and people took care of their runs, because the runs generated food, jobs, and revenue for the towns. The generation that used to eat river herring is dying out, and the focus has shifted to protecting river herring as part of the food chain for other species, and that it's certainly recognized as an important benefit.

But I think the point was made, because it's a more removed benefit than the personal experience of capturing a fish and handling it. Then our goals should be to bring river herring and shad populations back to a place where they can be harvested and serve their role in the ecosystem. The ASMFC has a duty to incentivize more data collection for river herring, and reconnect people with fish through education and citizen science.

Then finally, additional guidance on the Alternative Management Plans could be more specific on incentivizing data collection, in exchange for providing for a low level of personal harvest. I believe that

concludes our comments from the AP. I would just mention that our full report is behind the supplemental materials.

CHAIRMAN ARMSTRONG: Thank you, Pam. Are there any questions from the Board for Pam? Toni, any hands?

MS. KERNS: No, no questions yet.

MS. STARKS: I see Emerson's hand up, or maybe not anymore.

CHAIRMAN ARMSTRONG: Emerson, did you have a comment?

MR. HASBROUCK: I was going to make a motion to accept the management plans when you're ready for that motion.

CHAIRMAN ARMSTRONG: Okay. Caitlin, the motion that started to be up there. Would that cover the Alternative Plans and the Sustainable Fishery Plans?

CONSIDER APPROVAL OF STATE PROPOSALS

MS. STARKS: I think it would need to be made a little more specific, if you wanted it to only cover the SFMP and state proposals that were not Alternative Plans. This I think could cover all of them. If there is a desire to do that separately, I think that this would have to be modified.

CHAIRMAN ARMSTRONG: Why don't we leave it broad? I think New Hampshire will handle separately, so this includes the Alternative Plans and the SFMP modifications. Would anyone like to make that motion for discussion?

MS. KERNS: Lynn Fegley has her hand raised.

CHAIRMAN ARMSTRONG: Lynn, you are making that motion, thank you Lynn Fegley.

MS. KERNS: And Spud Woodward has his hand up as the seconder, I believe.

CHAIRMAN ARMSTRONG: Excellent, seconded by Spud Woodward. Then Emerson I think has his hand up for a question, maybe, or a comment?

CHAIRMAN ARMSTRONG: Okay, go ahead.

MR. HASBROUCK: No, I had my hand up, and as I mentioned before, I was ready to make that motion when the Chair was ready.

CHAIRMAN ARMSTRONG: Right, I'm sorry.

MR. HASBROUCK: It's already been made and seconded, so I'm fine.

CHAIRMAN ARMSTRONG: That's my fault, Emerson. Anyway, any discussion, would Lynn or Spud need to say anything about this?

MS. FEGLEY: No discussion from me, thank you.

MS. KERNS: You do have Chris Batsavage.

CHAIRMAN ARMSTRONG: Chris Batsavage, go ahead.

MR. BATSAVAGE: Yes, I think I could support the motion for approving all of these. I just want to raise my concerns for just how the Alternative Management Plans, a plan is written in the amendment. I think the AP brought up some good points, as far as it's not really a level playing field for states that have SFMPs, and do the monitoring to make sure their fisheries are sustainable, and don't open fisheries that they don't have the available data.

It almost incentivizes states not to collect as much information, quite frankly. When you consider that river herring is always just a few steps away from potentially being listed as threatened or endangered on the endangered species list, I think I would hope that the TC and PDT works to kind of firm up what is allowed in alternative management plans in the future. Thanks.

CHAIRMAN ARMSTRONG: Thank you, Chris, good comment. Any other comments?

Draft Proceedings of the Shad and River Herring Board Meeting Webinar
August 2020

MS. KERNS: We have Megan Ware, and then Emerson, your hand is still up, so I'm not sure if that is left over from before or not.

CHAIRMAN ARMSTRONG: Megan, go ahead.

MS. MEGAN WARE: I think it would just be helpful for me if one of the states with the Adaptive Management Plans could just speak a little bit to the development of that and why they didn't go with catch and release. I mean if there doesn't appear to be recreational harvest now, I'm just trying to understand the state's thought process. I think that might be helpful.

MS. KERNS: You have Spud Woodward with his hand up, Mr. Chairman.

CHAIRMAN ARMSTRONG: Go ahead, Spud.

MR. A.G. "SPUD" WOODWARD: Yes, I can speak to Georgia's approach on this. You know I've said this before in Board meetings that when we go, the four decision making bodies at our respective states and do things on behalf of the Commission. It's always important that they see the necessity and legitimacy of doing it.

If we were to request our Board of Natural Resources to promulgate catch and release regulations for a species that is functionally absent from a river system, then it calls the question, some of what we can do as a Commission. We feel confident that we have data collection processes in place that are going to detect the occurrence of these species, if they do become something other than functionally absent.

We think we're consistent with the spirit of the plan and the intent of the plan, to make sure that we do adequately manage river herring if they do occur with any frequency and abundance, that we will catch that in our data collection process. We have roving crew surveys independent of MRIP, so we're covering the possible range of distribution of these species in these river systems. That is just the Georgia perspective.

CHAIRMAN ARMSTRONG: Thank you, Spud, are there any other Alternative Plans who would want to comment?

MS. KERNS: I don't see any hands raised.

CHAIRMAN ARMSTRONG: Any other questions, comments on the motion?

MS. KERNS: I do not see any hands.

CHAIRMAN ARMSTRONG: All right, again we'll try for consensus. Are there any no votes?

MS. KERNS: I don't see any hands for no votes.

CHAIRMAN ARMSTRONG: All right, seeing none, you will consider the motion passed by consensus. I think we need to address New Hampshire's exemption, Cheri, do you have a motion?

MS. PATTERSON: Yes, I do, thank you. Can you bring it up, Maya? I move to approve New Hampshire's request for an exemption for their river herring SFMP requirement to close the fishery in 2020 based on data indicating that passage counts for the most recent three-year average did not meet the sustainability target of 72,450 fish. This exemption is based on explanatory information supporting the claim that passage counts are low due to equipment failure and other variables, rather than true fish passage numbers. If I can get a second, I can delve into that further.

CHAIRMAN ARMSTRONG: Is there a second?

MS. KERNS: We have Roy Miller.

CHAIRMAN ARMSTRONG: We have a second by Roy Miller.

MS. PATTERSON: Thank you, Roy. We have been struggling with a couple of our fish passage places in two river systems. One of them we've been trying to modify, in order to address a hydro development facility that continually adjusts the impoundment levels. So far that is not working out really well.

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The Board will review the minutes during its next meeting.

We thought we had it resolved this spring, but due to the flows that really didn't come through this spring, the modifications we made still were not passing the amount of fish that we should be passing in the Cocheco. As for our second river system, we had a dam removal project there, and we were hoping to continue to monitor the fish passage at the next dam and fish ladder.

However, it seems as though the fish that are bypassing, or going through the former dam site are not making it up to the other fish ladder, they're dropping out and doing their spawning below that. We're not getting a really good count of what is going past that former dam site that had a fish ladder where we were accounting for those fish in that river system. The 2020, we had moved this past the TC. They agreed that due to circumstances that they were okay with us not closing the fishery in 2020.

It so happens that it's a moot point now. We didn't close the fishery in 2020. The fishery is done, it pretty much goes from April through June. But based on us still running into problems with these two river systems, and our fish passage counts are still below the sustainability target that we will be closing our season in 2021, in order to be able to thoroughly address our concerns, and get fish up into these system that are low producing at this point in time. Does anybody have any questions?

CHAIRMAN ARMSTRONG: Questions for Cheri, comments. I assume there are none.

MS. FEGLEY: Mr. Chairman, this is Lynn Fegley. I raised my hand. I do have a question.

CHAIRMAN ARMSTRONG: Oh, Toni is completely dropping the ball, sorry. Go ahead, Lynn.

MS. FEGLEY: No, that is fine. Cheri, just so that I'm clear and I didn't miss it. The 2020 fishery, which is what this motion is about is already

essentially over, and you are planning on closing the fishery in 2021. Is that correct?

MS. PATTERSON: That is correct.

MS. FEGLEY: Awesome, thank you.

CHAIRMAN ARMSTRONG: I guess we'll move the motion. We'll try to do it by consensus. Are there any objections to the motion?

MS. KERNS: I do not see any hand raised in objection.

CHAIRMAN ARMSTRONG: Thank you, then the motion passes by consensus.

MS. PATTERSON: Thank you very much.

CHAIRMAN ARMSTRONG: I think we have the major items done. We just have a couple of short updates and elect a Vice-Chair. We're going to stay the course. It will probably take ten or fifteen more minutes. Thank you for all your forbearance.

UPDATE ON RIVER HERRING TECHNICAL EXPERT WORK GROUP ACTIVITIES

CHAIRMAN ARMSTRONG: Caitlin, could you update us on the TEWG?

MS. STARKS: Yes, I can. Can everyone see my screen now?

CHAIRMAN ARMSTRONG: Yes.

MS. STARKS: These will be very fast, I just have one quick update on the TEWG, well two quick updates on the TEWG, and then a quick update on Shad Habitat Management Plan. For the TEWG, I just want to give a little bit of background, since you haven't discussed it in a while. But this group was formed in 2014, as a joint effort between NOAA Fisheries and ASMFC, and it was kind of in response to the 2013 determination that was seeing river herring under the ESA was not warranted.

When that determination was made, the two bodies agreed to develop a long-term dynamic conservation

plan for river herring, and formed the TEWG with the purpose of informing that conservation plan, and identifying the critical data gaps and research needs that are hindering river herring recovery.

The TEWG produced a few white papers, focusing on different areas like river herring genetics, climate change impacts, fisheries, et cetera, and those were supposed to serve as the foundation for the conservation plan. That plan was considered completed in 2015, but it didn't exactly realize what the vision was, which was kind of a comprehensive document synthesizing all of that information into one place.

After producing those white papers, which were put online on a web format, the TEWG working group and subgroup kind of stalled, without having a real clear purpose or deliverable to produce. But the group as a whole has continued meeting twice a year, and these meetings have kind of transitioned from a work focus to more of an information exchange format among river herring experts. Over the last several meetings we've gotten a sense from the participants that there is still an interest in having a more actionable document to guide river herring conservation efforts along the coast. Fortunately, NOAA Fisheries has recently secured some funding to have a contractor go back and try to update and rework that conservation plan from 2015 into something more comprehensive and informative to managers. NOAA Fisheries has outlined the scope of work for this contract, which is supposed to start in early 2021. The project is expected to produce something like that comprehensive document that provides a framework, goals and objectives, for river herring restoration throughout their range, based on expert opinions.

I guess now is a good time to note that we're trying to move away from calling it a conservation plan, because the document would not be requiring the states or NOAA to implement any actions, but would rather

provide managers with updated information on the current threats, existing federal and state management actions, data and research needs, and expert recommendations for conservation and restoration efforts aimed at river herring recovery.

In general, the goal of this document would be to promote collaboration of river herring practitioners from different fields, support priority setting, and provide recommended actions for conservation and restoration of river herring throughout the range. That is an update on TEWG work, and then another update is that the coordinators being Sean McDermott from NOAA Fisheries and myself, have discussed changing the name of the group to better reflect the change in function from that workgroup format to more of an information exchange format.

We've had good attendance and positive feedback from participants on this new meeting format, as well as the potential name change. After discussing a few options, we're focusing on the name Atlantic Coast River Herring Collaborative Forum or River Herring Forum for short. Today I just wanted to get the Board's feedback on these two updates, and determine if there is general agreement among the Board members on the focus of the contract work that I described, and the potential renaming of the TEWG.

I'm happy to take questions and comments at this meeting, or I could also have follow-up e-mails if Board members have additional thoughts they would like to add or would like more information on either of these things. I also think NOAA staff discussing with them, they would be open to having a more detailed discussion on the focus and product of the contract work at a future meeting, if there is a desire from the Board. With that I guess I will open it up for questions or any quick comments that folks might have.

CHAIRMAN ARMSTRONG: Questions or comments for Caitlin, keeping in mind that there can be follow up conversations also.

MS. KERNS: Mike, I do not see any hands raised.

**UPDATE ON TIMELINE FOR
SHAD HABITAT PLAN UPDATES**

CHAIRMAN ARMSTRONG: Seeing that let's move on. Caitlin, can you talk about the Shad Habitat Plan Timeline? UPDATE

MS. STARKS: Yes. This update is about those American shad habitat plans, which I'll just remind you are required under Amendment 3. All states and jurisdictions must submit a habitat plan for American shad, and we discussed this at the last meeting in February, and the Board asked the states to update those habitat plans, since it's been about five years since they were originally submitted.

With the exception of the Merrimack and Hudson Rivers, these were just the updates to the information that has already been put together, but the Merrimack and Hudson Rivers do not have management plans currently. The states did begin the process of reviewing those plans earlier this year.

However, as you can imagine with everything going on in the world right now, and COVID-19, many of the TC members have indicated to me that they have encountered delays, and it's unlikely that any states will be able to complete updates of their plans in time for the October, 2020 meeting.

Considering that, my recommendation is that the states should aim to update their plans and submit new plans for the Hudson and Merrimack in time for consideration at the winter 2021 ASMFC meeting. If the Board is okay with that plan, we would expect the states to submit plans to the TC for review in December at the latest, so that the Board could then consider them in February. That is all I have on that issue.

CHAIRMAN ARMSTRONG: All right. We could do a motion on this to allow extra time, I don't think we need to. I think just a head nod would be okay, given the circumstances. Does anyone have any heartburn with extending the timeline

a little bit for the completion of the habitat plans?

MS. KERNS: We have Bill Hyatt with his hand up.

CHAIRMAN ARMSTRONG: Go ahead, Bill.

MR. HYATT: No heartburn, this is just a real quick question. I was just wondering if these habitat plans include passage, dam removals, those types of items, if that is part of what is included.

MS. STARKS: Yes. I can send around an outline, but the information is in Amendment 3, and it does include things like restoration efforts, dam removals, passage, additions, and things like that. We would want to get updates from the states on additional projects that have gone on during the last five years since these were implemented, state plans were implemented.

MR. HYATT: Very good, thank you.

CHAIRMAN ARMSTRONG: Okay, any other comments?

MS. KERNS: I do not see any other hands raised, Mike, and I agree we don't need a motion to delay.

CHAIRMAN ARMSTRONG: All right, we will consider that a group nod, and we'll see those plans in January, I guess.

ELECT VICE-CHAIR

CHAIRMAN ARMSTRONG: All right, we have one remaining item, well two with Other Business. We need to elect a Vice-Chair, a critical action. Would anyone like to make a motion to nominate someone?

MS. KERNS: We have Ray Kane.

CHAIRMAN ARMSTRONG: Ray Kane, go ahead, please.

MR. RAYMOND W. KANE: I would like to nominate Dr. Justin Davis from the state of Connecticut as Vice-Chair.

CHAIRMAN ARMSTRONG: Thank you for that motion, do we have a seconder?

MS. KERNS: Dennis Abbott.

These minutes are draft and subject to approval by the Shad and River Herring Management Board.
The Board will review the minutes during its next meeting.

CHAIRMAN ARMSTRONG: Thank you, Dennis, seconded by Dennis Abbott. Is there any discussion?

MS. KERNS: No hands.

CHAIRMAN ARMSTRONG: Seeing none, the motion carries by consensus. Congratulations, Justin. Which brings us to Other Business. Does anyone have any other business?

MS. KERNS: I do not see any hands.

ADJOURNMENT

CHAIRMAN ARMSTRONG: Again, I really want to thank the Stock Assessment Committee and the Review Committee. That was an awesome job, and you've got a lot to do. The stocks still remain in pretty tough shape, so with that we'll look for the future and this meeting is adjourned.

(Whereupon the meeting ended at 12:23 p.m.
on August 4, 2020)



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Shad and River Herring Management Board
FROM: Shad and River Herring Technical Committee
DATE: January 15, 2021
SUBJECT: TC Recommendations on improving shad stocks given assessment results

In August 2020, the Board reviewed and accepted the 2020 Benchmark Stock Assessment for American shad (assessment), which found that the coastwide metapopulation is depleted, and adult mortality for several system-specific stocks is unsustainable. Additionally, the assessment concluded that shad rebuilding is limited by restricted access to spawning habitat. In response, the Board tasked the Shad and River Herring Technical Committee (TC) to *"identify potential paths forward to improve shad stocks along the coast considering the assessment results."* The TC met several times via webinar following the August 2020 meeting to address this task.

The TC considered potential management and monitoring improvements for specific stocks identified in the assessment as unsustainable, depleted, or of unknown status with an active fishery. In addition, the TC developed broad recommendations for the coastwide metapopulation. A summary of the TC's system-specific and coastwide recommendations are summarized below. For each system, more information and rationale for the TC recommendation is provided in individual memos (enclosed).

Connecticut River

The assessment found that adult mortality for the Connecticut River stock is unsustainable. However, the annual adult shad fish lift counts have shown an increasing trend over the past 12-15 years, even as total mortality has remained very high. In addition, the sustainability metrics in the approved Sustainable Fishery Management Plan (SFMP) have remained above target levels, with the exception of the initial year of the plan's implementation. The TC agrees that high downstream mortality at hydropower facilities and other associated factors are the primary sources of Connecticut River shad mortality, rather than fishery effort, and that the current low levels of fishing activity have not contributed to the increased values of total mortality in the system. Therefore, the TC does not recommend any further restrictions to the Connecticut River shad commercial and recreational fisheries. The TC recommends the following actions as pathways to improve the stock:

- Continue to closely monitor the metrics currently used to gauge fishery sustainability: adult lift passage, juvenile abundance, and adult escapement and implement management response to negative metrics, as appropriate
- Work with Connecticut River Atlantic Salmon Commission partners to realize continued passage and habitat improvements
- Explore alternative (non-creel) survey methods to provide recreational effort and harvest estimates

Delaware River

The assessment found that adult mortality for the Delaware River stock is unsustainable. The TC does not recommend any changes to management or monitoring for the 2021 fishing season. The TC recommends the following actions as first steps for addressing the Delaware River stock:

- Revise the SFMP to include updated data and stock assessment results, and incorporate a management response to be triggered by an unsustainable adult mortality determination from the stock assessment. Potential management responses that will be considered by the Delaware River Basin Fish and Wildlife Management Cooperative include:
 - Closure of commercial fishery; recreational catch and release only
 - Reduce commercial fishery by 50% through gear restrictions, seasons, trip limits, or quota reduction; reduce recreational fishery to 1 fish bag limit
 - Reduce commercial fishery by 25% through gear restrictions, seasons, trip limits, or quota reduction; reduce recreational fishery to 2 fish bag limit
 - Gill nets with stretch mesh greater than or equal to 4 inches and less than 7 inches will be prohibited below the mixed stock demarcation line during February 1st - May 31st. Harvest of American shad as bycatch (American shad <50% of harvest by weight) is still permissible below the demarcation line from Bowers Beach, DE to Gandys Beach, NJ.

Potomac River

The assessment found that adult mortality for the Potomac River stock is unsustainable. Additional years of data not included in the assessment (2018-2020) show continued increasing trends in the Potomac Pound Net Catch per Unit Effort index, as well as increasing trends for shad in the Potomac River Striped Bass Spawning Stock and Juvenile Seine Surveys. The current known sources of in-river removals include broodstock collection programs, and limited bycatch harvest by in-river pound and gill net fisheries. The TC was concerned that further restricting these minor removals could result in reduced data availability for assessment, and would likely not have a significant positive impact on the stock. The TC recommends the following actions as pathways to improve the stock:

- Reduce or eliminate harvest/bycatch of Potomac River origin American shad in ocean fisheries (near term, high priority)
- Prioritize conservation of natural land cover throughout the lower Potomac watershed (ongoing, long term, high priority).
- Continuation of expansion of commercial and recreational fisheries on non-native predators (blue catfish and flathead catfish) in the Potomac River (ongoing, high priority).
- Identify the contribution of Potomac River origin American shad to mixed stock ocean bycatch through the collection and submission of biological samples (i.e. American shad fin clips) to the U.S. Geological Survey for their effort in building a comprehensive genetic tissue repository for alosine species (Starting in 2021, high priority).

Hudson River

The assessment found that the Hudson River stock is depleted. There is currently no harvest of American shad permitted in the system. TC agrees that harvest of Hudson-origin shad in mixed-stock fisheries in large coastal bays (i.e. Delaware Bay), incidental bycatch of American shad in federal fisheries, and habitat loss are the main factors affecting the status of the stock. The TC recommends the following actions as potential pathways to improve the stock:

- Reduce/eliminate harvest of Hudson shad in mixed-stock fisheries and ocean bycatch (near-term; high priority)

- Identify stock composition of bycatch occurring in Federal fisheries and quantify impact to the Hudson stock (near-term; high priority)
- Implement habitat restoration actions identified in the Hudson River Estuary Habitat Restoration Plan (Miller 2013) to restore high-quality spawning, nursery and refuge habitats for American shad (on-going, long-term; high priority)
- Continuation of fishery closure until recovery targets (Hudson River American Shad Recovery Plan, in prep) are met and stocks are robust enough to support sustainable harvest (long-term; high priority)

Maine Systems

The assessment determined that American shad stock status throughout Maine is unknown. The two major areas of concern addressed in the assessment regarding data were insufficient time series length and validity of count data collected at monitored fishways on Maine's larger rivers. The TC agreed that there is currently limited potential to improve biological data collection due to small run sizes, so the TC recommends the following action as a pathway to improve Maine shad stocks:

- Removal of significant barriers to upstream passage. This may enhance production, increase abundance and provide more opportunity to collect biological data through additional sampling methods without taking a significant portion of the returns to a system.

Merrimack River

The assessment determined that the American shad stock status in the Merrimack River is unknown; data were insufficient to determine abundance status, and deficiencies with low age samples in some years prevented the calculation of a mortality estimate. The Merrimack SFMP benchmark for spawning run sustainability has been achieved with an increasing trend in the last 10 years. However, the SFMP's warning threshold on shad mortality (based on Amendment 3 provides benchmark values for New England) has been exceeded each year since 2013. Based on the assessment findings and this additional data, the TC recommends the following focal areas and actions as pathways to improve the stock:

- Merrimack River Shad Mortality: Commit to addressing concerns with data time series and age sample sizes as indicated in SFMP. Discuss goals, and focus new staff on sampling targets and the need to improve the data quality and utility of mortality estimates for some years.
- Juvenile Abundance Index: No historical or recent efforts have been undertaken to create a shad juvenile abundance index (JAI) on the Merrimack River, though state and federal agencies have discussed an interest in developing a JAI index. Concerns have been expressed over inherent high variability in shad JAI indices on the East Coast, and most importantly, no identified funding source to support a JAI index project.
- Repeat Spawning Ratio: Improve spawning ratio data time series through ongoing shad scale aging. The current time series is too brief to use the data for setting a repeat spawning ratio benchmark or to discern any trends.
- Restoration Efforts: Poor passage at mainstem dams and tributaries without passage is a significant limitation to increasing shad populations. Continue annual reviews with hydropower dam owners to identify operation and maintenance issues that can impact shad passage and recommended improvements. Continue development of a Comprehensive Plan for fish restoration in the Merrimack system that will set target population levels and prioritize restoration efforts during the Pawcatuck Dam relicensing process.

Tar-Pamlico

The assessment determined that the American shad stock status in the Tar-Pamlico system is unknown, due to insufficient data. SFMP sustainability metrics, including relative female abundance and relative fishing mortality (F) for female shad derived from the electrofishing survey, have not triggered a management response; however, the female abundance index has fallen below the threshold in the last two years for which data is available (2018 and 2019, data are unavailable for 2020 due to COVID-19 pandemic restrictions). The estimate of female relative F has remained well below the threshold since 2013, consistent with a decline in commercial landings. In 2017, NCDMF initiated exploratory juvenile abundance sampling for striped bass using trawl and seine nets in the Tar-Pamlico and Neuse rivers. While the focus of the survey is to obtain juvenile striped bass, the survey may also intercept American shad and may be of use for a juvenile abundance index in the future.

Additionally, a management response for striped bass has been in effect since March 18, 2019 prohibiting the use of all gill nets upstream of the ferry lines from the Bayview to Aurora Ferry in the Tar-Pamlico River and the Minnesott Beach and Cherry Branch ferry in the Neuse River. While targeting striped bass, this action also protects American shad by removing gill nets from the normal fishing grounds for American shad in the Tar-Pamlico River.

- Considering the recent management and monitoring changes described above, the TC recommended no additional actions for the Tar-Pamlico system at this time.

Cape Fear

The assessment determined that the American shad stock status in the Cape Fear system is unknown, due to insufficient data. The 2020 Benchmark Stock Assessment noted that there is an increasing trend in adult abundance, likely a sign of improved passage at Lock and Dam 1. Monitoring under the current SFMP is sufficient to detect any changes in abundance. Annual updates to sustainability parameters for female relative abundance and female relative F have not exceeded their thresholds since 2011 and 2012, respectively. Additionally, in 2017, NCDMF initiated exploratory juvenile abundance sampling for striped bass using trawl and seine nets in the Cape Fear River and its tributaries. While the focus of the survey is to obtain juvenile striped bass, the survey may also intercept American shad and may be of use for a juvenile abundance index in the future.

- Considering the assessment findings and the information above, the TC does not recommend any changes to management or monitoring requirements for the Cape Fear system at this time.

South Carolina Systems

The assessment determined that the American shad stock status for the Winyah Bay, Santee-Cooper, and Ace Basin systems are unknown due to insufficient data. Commercial fisheries occur in these systems under approved SFMPs. Additional information considered by the TC for each system is summarized below.

Winyah Bay: Young of Year (YOY) abundance data were not available, and there have been conflicting trends in adult abundance since 2005, further confounding assessment of abundance conditions in recent years. Data from fishery independent gill netting on the Waccamaw River (currently 2011-2020) will meet the minimum time series requirement and will be available for the next benchmark stock assessment. Electrofishing sampling for YOY juvenile shad began in 2011 and has occurred every year since. These data (currently 2011-2020) will meet the minimum time series (ten years) and will be available for the next benchmark stock assessment.

Santee-Cooper: YOY abundance data were not available and there have been conflicting trends in adult abundance since 2005, with an increasing trend detected from the Cooper River Recreational Creel Survey and no trend detected from the Santee River Adult Gill Net Survey or Santee River Commercial CPUE. Data from fishery independent gill netting on the Santee River (currently 2011-2020) will meet the minimum time series requirement and will be available for the next benchmark stock assessment. Electrofishing sampling for YOY juvenile shad began in 2011 and has occurred every year since. These data (currently 2011-2020) will meet the minimum time series and will be available for the next benchmark stock assessment.

ACE Basin: There were no YOY abundance data available and no trend detected in adult abundance since 2005. Electrofishing sampling for YOY juvenile shad began in 2011 and has occurred every year since; these data (currently 2011-2020) will meet the minimum time series and will be available for the next benchmark stock assessment.

- Considering the assessment findings and the information above, the TC does not recommend any changes to management or monitoring requirements for South Carolina systems at this time.
- The TC agrees with recommendations proposed by South Carolina to continue and improve existing monitoring programs and sampling efforts in all systems to expand the time series to meet the assessment threshold of ten years. Specific monitoring recommendations are included in the enclosed memo from South Carolina. The highest priority is beginning to collect age samples from otoliths in addition to scales.

Savannah River

The assessment determined that the American shad stock status in the Savannah River is unknown. Currently, commercial fisheries are pursued by both SC and GA under approved SFMPs. There were no YOY abundance data sets with appropriate time series available and no trend detected in adult abundance (two data sets) since 2005. As part of an ongoing sampling program, GADNR conducts electrofishing for spawning adult shad; these data (currently 2010-2020) will meet the minimum time series (ten years) and will be available for the next benchmark stock assessment. Additionally, SCDNR has conducted electrofishing sampling for YOY juvenile since 2011; these data will meet the minimum time series and will be available for the next benchmark stock assessment.

- Considering the assessment findings and the information above, the TC does not recommend any changes to management or monitoring requirements for the Savannah River at this time.
- South Carolina and Georgia intend to continue and improve existing monitoring programs and sampling efforts in all systems to expand the time series to meet the assessment threshold of ten years. Specific monitoring recommendations are included in the enclosed memos from South Carolina and Georgia.

Altamaha River

The assessment determined that the American shad stock status in the Altamaha River is unknown. A commercial fishery occurs in this system under an approved SFMP. There were no YOY abundance data sets with appropriate time series available, and abundance indices showed conflicting trends. Since 2010, GADNR has conducted seine surveys to collect data on YOY shad; these data will meet the minimum time series and will be available for the next benchmark stock assessment. Additionally, GADNR will consider implementing improvements to the Altamaha River Tagging Survey that were recommended in the assessment.

- Considering the assessment findings and the information above, the TC does not recommend any changes to management or monitoring requirements for the Altamaha River at this time.
- Georgia intends to evaluate and discuss possible changes to improve management and monitoring. In particular, the state is considering collecting both otoliths and scales for age data.

St. Johns River

The assessment determined that the American shad stock status in the St. Johns River is unknown. Trend analysis of YOY and spawning stock abundance indices showed no trend and an increasing trend, respectively. It is likely that the population was stable or improving during the assessment period, since neither index declined over time and mean fork length of males and females both increased. Additional data that could aid in stock status determination are being collected; spawner otoliths are available for age composition and size-at-age starting in 2011, and a time series greater than ten years will be available for the next assessment. Currently, the only known source of American shad removals is recreational harvest permitted under the approved SFMP.

- Considering the assessment findings and the information provided by the state, the TC does not recommend any changes to management or monitoring requirements for the St. Johns River at this time.
- The TC recommends that FL improve monitoring data by better accounting for environmental variability effects, and using age data to identify year class and maturity schedule.

Coastwide Recommendations

The TC also discussed pathways for improving shad stocks at the coastwide level. In general, the TC felt that management restrictions at the system level are not likely to produce the desired result, given that directed harvest is already significantly restricted and current habitat conditions and other factors such as passage are limiting population recovery at a larger scale. Therefore, the TC recommends the following actions to improve data quality and availability for assessment, and to lay a stronger foundation for success in shad recovery efforts along the coast.

- The TC agrees that upstream and downstream passage mortality pose substantial threats to shad stocks along the coast and limit the potential for population recovery. The assessment provided analysis suggesting that passage barriers reduce coastwide spawner production potential by as much as 41%. To address this issue, the TC recommends that further action by the Board or Commission is needed to promote or implement measures to improve fish passage along the coast. The TC is currently developing a memo to provide the Board with more detail and recommendations on this issue.
- The TC does not recommend any changes to the current monitoring requirements established in Amendment 3. However, the TC recommends that states aim to improve their surveys to increase survey power to meet the assessment threshold of 80% power to detect a change of 50% over a 10 year time period, when feasible.
- The TC recommends paired otoliths and scales be collected in all systems where it is possible.
- The TC recommends the Board task them with developing alternative methods or metrics to evaluate bycatch removals in directed mixed-stock fisheries in state waters. Such methods are needed to understand and reduce impacts to stocks outside the area where directed catch occurs.
- The TC recommends that system-specific restoration targets should be developed for those systems where appropriate and when sufficient data are available, or revisited where they already exist. These targets should be incorporated in shad habitat plans and existing SFMPs during the next update. The TC would provide input on restoration targets proposed for

inclusion in the SFMPs. The rationale is that this will provide measurable goals for evaluating recovery efforts.

Of the high priority research recommendations identified in the assessment, the TC wanted to highlight two in particular that would contribute the most to the ability to improve shad stocks and the assessment:

- Conduct annual stock composition sampling through existing and new observer programs from all mixed-stock fisheries (bycatch and directed). Potential methods include tagging (conventional external tags or acoustic tags) of discarded catch and genetic sampling of retained and discarded catch. Mortality rates of juvenile fish in all systems remain unknown and improvement in advice from future stock assessments is not possible without this monitoring. Known fisheries include the Delaware Bay mixed-stock fishery and all fisheries operating in the Atlantic Ocean (U.S. and Canada) that encounter American shad (see Section 4.1.4 in the stock assessment report).
- Otoliths should be collected as the preferred age structure. If collection of otoliths presents perceived impact to conservation of the stock, an annual subsample of paired otolith and scales (at least 100 samples if possible) should be collected to quantify error between structures.
 - The TC recognizes that otoliths are difficult to obtain from some sources (e.g., for fishery dependent sampling it will be difficult to obtain the otolith and/or the recommended subsample of 100 paired otoliths/scales per system without purchase or donation of fish from harvesters). Therefore, the TC agrees that scales can continue to be collected from data sources where otoliths are unable to be collected.

Memo

To: Caitlin Starks, SRH FMP Coordinator; ASMFC Shad and River Herring Technical Committee
From: Jacque Benway, CT DEEP Fisheries Division, Marine Fisheries Program
Date: 12/8/2020
Re: Summary of CT DEEP CT River shad monitoring and management recommendations in response to stock status designation from the 2020 American Shad Coastwide Stock Assessment.

The Shad and River Herring Technical Committee has requested that all states provide context that may explain the 2020 American Shad Stock Assessment findings. This response from the State of Connecticut/Commonwealth of Massachusetts addresses concerns over the status of American Shad (*Alosa sapidissima*) in the Connecticut River. Please note that Massachusetts has reviewed the draft memo and consulted with Connecticut on this inquiry. Both states agree on the current status and necessary actions for the Connecticut River American Shad population.

- ***Identify areas of concern identified in the assessment (e.g. stock status, data deficiencies preventing stock status determination, habitat issues)***

The recent results from the 2020 shad stock assessment were based on the following CT River data: CT River Commercial Adult shad catch and effort, 1995-2017 (no trends detected), Long Island Sound Trawl Survey relative abundance (primarily subadults, potentially mixed stocks), CT River Juvenile shad seine survey data below the Holyoke Dam, 1978-2017 (no apparent trend with peak value in 2016), Adult Shad scale age structure from Commercial catches (no trend) and Holyoke fish lift (Mann-Kendall Trend analysis detected a decrease in mean length-at age in age 6 for females and males), and annual Adult shad Holyoke fish lift counts (increasing trend after 2005).

The primary concern of the Stock Assessment Sub-Committee (SAS) was that the CT River had high total mortality estimates. In the stock assessment, the Regional Metapopulation Northern Iteroparous total mortality threshold at Z40% was set at 1.00. Average adult mortality during the last 3 years of the assessment time series (2015-2017: $Z = 1.40$, $SE = 0.59$) was greater than respective regional per-recruit reference point for the CT River shad stock.

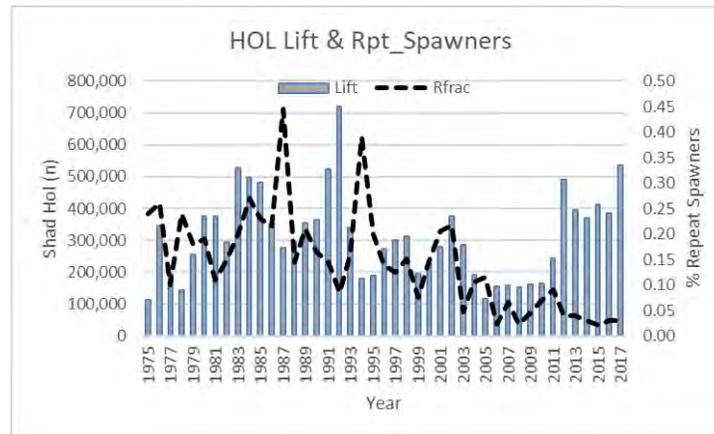
- ***Identify additional information not considered in the assessment stock status determination that provides more context on the stock, fishery, etc. (e.g. more recent years of data, SFMP metrics and performance, survey trends)***

As noted by the SAS, the annual Adult shad fish lift counts have shown an increasing trend over the past 12 – 15 years even as total mortality has remained very high. Over this time period, the Connecticut River Atlantic Salmon Commission (CRASC), which cooperatively manages diadromous fish in the CT River Basin, has identified downstream adult and juvenile mortality as an issue for the CT River shad population and has

been working to understand these issues through modeling approaches (see Addendum on [American Shad Passage Performance Criteria, for the Connecticut River American Shad Plan, CRASC 2020](#)) as well as working with the operators of the Holyoke Dam to improve downstream passage conditions. The most recent changes were made in 2016, at the end of the time series used in the assessment. CT DEEP and MA DMF believe that high downstream mortality at hydropower facilities and other associated factors are the primary sources of CT River shad mortality, rather than fishery effort. Details on repeat spawner rates, commercial fishing effort, recreational fishing effort, and the current approved SFMP that support this argument are provided below, followed by the information we have identified to improve mortality estimates and partitioning.

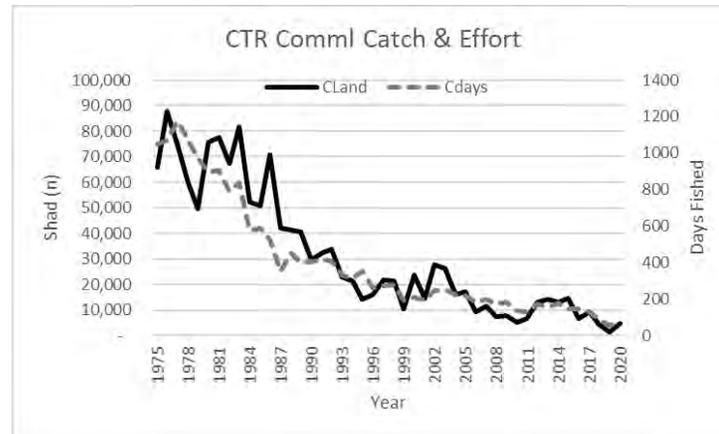
Repeat Spawner rate time series:

The average fraction of repeat spawners (age aggregated and sexes combined) has been monitored annually for Connecticut River shad since 1966. Repeat spawning is based on the presence of one or more spawning scars on scale samples. The fraction of repeat spawners in the population is a measure of inter-annual survival, and an instantaneous total mortality rate was calculated annually. The calculated annual Z estimates have increased steadily from 1966-2017 from a low of 0.8 in the mid 1960s to over 3.5 in 2008. Except for 1987 and 1994, the estimated instantaneous Z values calculated based on the rate of repeat spawners have always exceeded the Z40% threshold of 1.00.

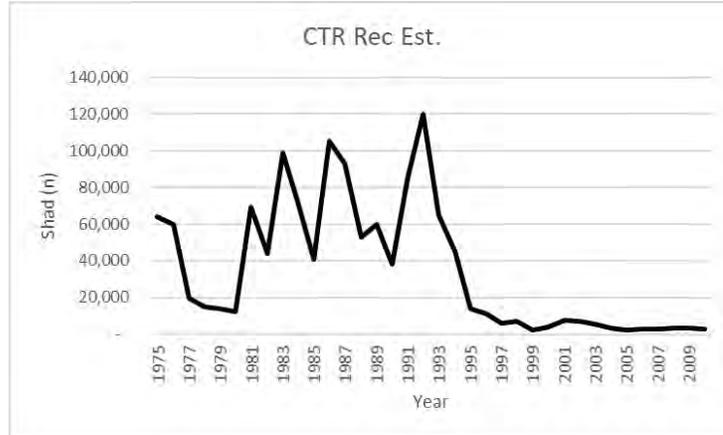


CT River Commercial Landings

The number of commercial shad fishing licenses and associated effort has been steadily declining since peak levels during and after World War II. Recent commercial license sales have declined to low levels, less than 10 license holders annually, and are expected to stay low or further decrease as fishermen retire and are not replaced. A high proportion of license holders exceed age 58 as few new participants have entered the fishery in the last decade. The commercial shad fishery is managed through area, gear, and season restriction as well as rest days. The American shad gill net season runs from April 1 through June 15. The annual landings for the CT River Commercial Fishery have continued to decline since the terminal year of data submitted for the stock assessment. Landings in 2019 were at an all-time low for the time series.



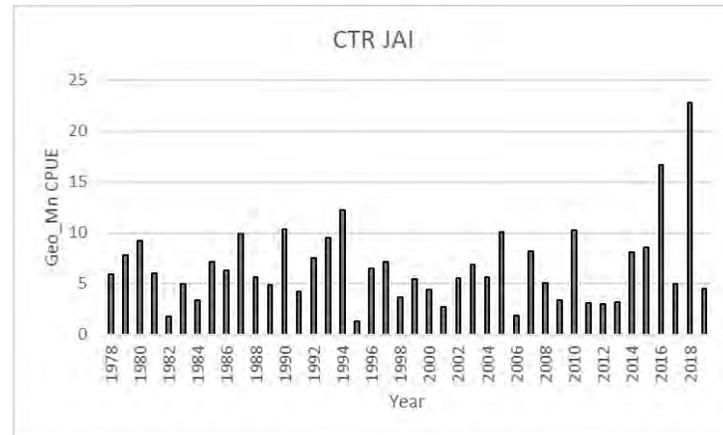
CT River Recreational Fishery: The CT River recreational fishery takes place in Connecticut from Hartford to the state line during the upstream migration of shad. The recreational catch and effort data was not included in the assessment, since the time series has not been continuous in recent years. The CT recreational fishery for Shad was monitored in CT portions of the river (Hartford to state line) from 1980-1996 and periodically (generally every 5 years) from 1996 to 2010. Recreational shad landings in CT began to fall dramatically after 1995 to a point where harvest estimates from creel surveys were unreliable and imprecise as reflected by high (> 80%) proportional standard errors about the mean harvest estimates. Because of the low precision around catch estimates due to a low incidence of positive intercepts in the creel survey, recreational creel surveys decreased to five year intervals (i.e. 2000, 2005 and 2010). After 2010, there have not been enough staffing or funding resources at CT DEEP to conduct a creel survey.



Access to traditional shad fishing sites along the Connecticut River has changed over the years with infrastructure changes, restricted shore access due to development and the natural breaching of a low head dam in Enfield.

CT Sustainable Fishing Management Plan:

Approved in 2013 and renewed in 2017, CT uses 3 metrics to monitor sustainability of CT Fisheries. The first response metric is passage, or the number of adult fish lifted at the first main stem dam in Holyoke MA. The trigger for passage is 140,000 fish. Recruitment (JAI) at this value has varied independent of adult stock size, indicating sufficient stock reproductive capacity to support future stock reproduction and recruitment. The second metric is Recruitment Failure (recruitment), defined in Amendment 3 as three consecutive years of recruitment in the lower quartile of the time series.



The third metric, escapement, is a measure of fishing pressure on the stock expressed as the proportion of the total run “escaping” the fishery to spawn. A conservative trigger of 90% escapement was chosen to facilitate timely review of potential implications for future stock.

The sustainability metrics have remained above target levels, with the exception of the initial year of the plan’s implementation. In 2013, the JAI fell below the threshold. Since then, all targets have remained above the thresholds to date.

Information needed to determine additional contributors to mortality other than F:

- Holyoke lift annual mortality estimates for upstream and downstream passage for adults & juveniles
 - Current assessment of the annual proportion of the shad stock that passes upstream at the Holyoke fish lift
 - Recent predation impacts (e.g. striped bass) on CT River shad (adults & juveniles)
 - Continuation of support of habitat restoration (e.g. through the FERC relicensing process)
 - New methods to estimate recreational effort
 - Continued research that would give better insight into stock composition of mixed-stock fisheries and stock composition of oceanic bycatch.
-
- ***Suggest management or monitoring changes, or restoration efforts that would improve shad stock based on the information above***

As noted above, the non-fishing mortality component of shad stock Z estimates is a high proportion of the total mortality, while fishing mortality has remained a small proportion in recent decades. This has been a challenge for management of the CT River shad stock. More research is needed in the CT River Basin to quantify the additional contributors to mortality. Despite the persistent declines in both the commercial and recreational harvest over the last several decades, there has not been any appreciable benefit to stock levels or mortality estimates. To that effect, recent JAI levels have been among the highest values of the time series while adult harvest has been at the lowest levels but total mortality has been above the threshold. We believe that any further fishery reductions would not have any positive effects on recruitment or the stock status, and any fishing mortality reductions would likely be offset or compensated for by other sources of mortality, resulting in no significant decrease of total mortality.

At this time, we recommend no further restrictions to the CT River shad commercial and recreational fisheries. We believe that the current low levels of fishing activity have not contributed to the increased values of total mortality in the CT River system. CT DEEP and MA DMF will continue to closely monitor the metrics currently used to gauge fishery sustainability: adult lift passage, juvenile abundance, and adult escapement. If one or more metrics are triggered, management response will include closer examination of actual metric values and other relevant biological and environmental factors contributing to the perceived stock condition. Fishery management action is contingent on a finding that harvest rates are materially contributing to diminished adult stock or recruitment. Management actions in response to 3 negative metrics could include, but may not be limited to one or more of the following: decrease in length of season, increase in number of rest days, decrease in recreational bag limit. Additionally, CT DEEP and MA DMF will work with CRASC partners to realize continued passage and habitat improvements and intend to explore alternative (non-creel) survey methods to provide estimates of recreational fishery effort and harvest.

Delaware River Basin Fish and Wildlife Management Cooperative

Cooperators

Delaware Division of Fish and Wildlife
National Marine Fisheries Service
New Jersey Division of Fish & Wildlife
New York Division of Marine Resources
Pennsylvania Fish & Boat Commission
U. S. Fish and Wildlife Service

Secretary

Sheila Eyler
Delaware River Coordinator
U. S. Fish & Wildlife Service
177 Admiral Cochrane Dr.
Annapolis, MD 21401
717-387-2117

Caitlin Starks

Atlantic States Marine Fisheries Commission
1050 N. Highland St. #200A
Arlington, VA 22201

5 November 2020

Dear Ms. Starks:

The Delaware River Basin Fish and Wildlife Management Cooperative (The Co-op) met on October 8th to discuss the three questions directed to States with an unsustainable, depleted, or unknown stock determinations from the ASMFC Shad and River Herring Technical Committee (email dated 10/2/20). The consensus of the group is presented below.

- *Identify areas of concern identified in the assessment (e.g. stock status, data deficiencies preventing stock status determination, habitat issues)*
The Co-op thought the assessment was extremely thorough and accurately reflected the status of the stock.
- *Identify additional information not considered in the assessment stock status determination that provides more context on the stock, fishery, etc. (e.g. more recent years of data, SFMP metrics and performance, survey trends)*
The Co-op thought that all available and appropriate information was considered in the stock status determination.
- *Suggest management or monitoring changes, or restoration efforts that would improve shad stock based on the information above*
The current Sustainable Fisheries Management Plan (SFMP) outlines steps that Delaware Basin States could take in response to hitting management triggers outlined in that plan. While an unsustainable stock determination does not technically trigger management action as defined in the SFMP, we consider these actions as potential options to respond to the unsustainable determination from the stock assessment. These options are listed below. The Co-op will continue to discuss these, and other options, through the development of the update to the SFMP due in 2021. This update will include both more recent data (2018 and 2019) and significant ongoing habitat assessment work being conducted by The Nature Conservancy.

- Closure of commercial fishery; recreational catch and release only
- Reduce commercial fishery by 50% through gear restrictions, seasons, trip limits, or quota reduction; reduce recreational fishery to 1 fish bag limit
- Reduce commercial fishery by 25% through gear restrictions, seasons, trip limits, or quota reduction; reduce recreational fishery to 2 fish bag limit
- Gill nets with stretch mesh greater than or equal to 4 inches and less than 7 inches will be prohibited below the mixed stock demarcation line during February 1st through May 31st. Harvest of American Shad as bycatch (American Shad < 50% of harvest by weight) is still permissible below the demarcation line from Bowers Beach, DE to Gandys Beach, NJ

Response to address assessment results of unsustainable adult American Shad mortality in the Potomac River

Ellen B. Cosby, Potomac River Fisheries Commission

Robert J. Bourdon, MD Dept. of Natural Resources

Areas of Concern

During the 2020 benchmark stock assessment, the mortality status of the Potomac River American shad stock was assessed using both catch curve and statistical catch at age (SCAA) models. The catch curve analysis was the preferred method for determination of mortality relative to the $Z_{40\%}$ SBPR reference point identified for the southern iteroparous metapopulation. The terminal three-year (2015-2017) average adult instantaneous total mortality exceeded the reference point, signaling that the Potomac American shad stock was experiencing unsustainable mortality levels. While not chosen as the favored assessment method due to retrospective bias, the results of the SCAA model corroborated the results of the catch curve analysis.

Additional Data for Consideration

PRFC	Commercial Bycatch Harvest		PN Discards/ Releases	PN CPUE (C + D)	PN GM Index	YOY GM Index
	Pound net	Gill net				
2018	18,146	374	19,300	145.14	47.3	7.36
2019	17,546	341	8,050	99.68	49.0	10.86
2020	12,310	4,693	16,750	148.27	51.5	8.68

MD DNR	PRFC Collection Permit	# A. Shad collected	Restoration stocking
2018	Yes	1,444	352,000 fry
2019	Yes	1,168	Unknown – no report
2020	No	0	0

USFWS	PRFC Collection Permit	# A. Shad collected	Restoration stocking
2018	Yes	2,397	470,083 viable eggs
2019	Yes	40 (1 day)	53,582 viable eggs
2020	Yes	0	0

DOEE	PRFC Collection Permit	# A. Shad collected	Restoration stocking
2018	Yes	179	50,000 viable eggs
2019	Yes	Unknown	Unknown – no report
2020	No	0	0

VDGIF	PRFC Collection Permit	# A. Shad collected	Restoration stocking
2018	No	0	0
2019	No	0	0
2020	No	0	0

AWS	PRFC Collection Permit	# A. Shad collected	Restoration stocking
2018	Yes	49	17,683 fry
2019	Yes	69	9,500 fry
2020	Yes	Unknown	Unknown

MD DNR Potomac River Striped Bass Spawning Stock Survey

Updated data for the MD DNR Potomac River Striped Bass Spawning Stock Survey provided an additional two years of data (2018 and 2019) compared to what was considered for the benchmark stock assessment (1985-2017). Geometric mean catch-per-unit-effort (GM CPUE), represented as the number of fish/1000 yds²/hour, was the highest on record in 2019. Mann-Kendall trend analyses detected an increase in GM CPUE over the entire time series ($z = 6.11$, $n = 34$, $p < 0.001$). Additionally, an increase in GM CPUE was detected during the reference period of 2005-2019 ($z = 2.43$, $n = 15$, $p = 0.01$); this represents a departure from the results of the stock assessment which found no trend in GM CPUE for 2005-2017.

Updated catch-at-age matrices by sex are available from this survey should the commission wish to calculate total adult mortality for the three terminal years of 2017-2019.

MD DNR Potomac River Striped Bass Juvenile Seine Survey

Updated data for the MD DNR Potomac River Striped Bass Juvenile Seine Survey provided an additional two years of data (2018 and 2019) compared to what was considered for the benchmark stock assessment (1959-2017). Geometric mean catch-per-unit-effort (GM CPUE), represented as catch per seine haul, reached its second highest value on record in 2019. Mann-Kendall trend analyses detected an increase in GM CPUE over the entire time series ($z = 5.05$, $n = 61$, $p < 0.001$). Additionally, an increase in GM CPUE was detected during the reference period of 2005-2019 ($z = 1.98$, $n = 15$, $p = 0.048$); this represents a departure from the results of the stock assessment which found no trend in GM CPUE for 2005-2017.

Management and Monitoring Considerations

The primary sources of anthropogenic mortality impacting Potomac American shad are broodstock collection programs, limited bycatch harvest by in-river pound and gill net fisheries, and bycatch in ocean fisheries. It has been hypothesized that stocks with higher abundances, such as the Potomac River, may be disproportionately impacted by ocean fisheries. Unfortunately, sufficient genetic information to support this claim is not currently available and Potomac origin bycatch is unable to be quantified. However, the Maryland Department of Natural Resources will begin providing genetic samples for alosine species from a number of Maryland rivers in 2021 as part of a US Geological Survey effort to build a comprehensive tissue repository for alosine species. Genetic information generated by this project will be useful for stock identification of American shad bycatch. The collection of Potomac American shad tissue samples will be given high priority by this project in 2021.

Sources of mortality of early life phases of American shad in the Potomac are not well understood and cannot be quantified. However, the MD DNR Fisheries Habitat and Ecosystem Program (FHEP) has demonstrated that the presence of alosine eggs and larvae is negatively correlated with the amount of impervious surfaces in a watershed (Uphoff et al., 2017). Increased coverage of impervious surfaces due to urban and suburban development in watersheds increases runoff volume and intensity into streams, thus increasing the exposure of aquatic organisms to sedimentation, thermal pollution, contaminant loads, road salts, and nutrients. Given the high level of urbanization in the upper regions of Potomac American shad habitat, spawning success may be inhibited by poor water quality. The land areas surrounding the upper reaches of American spawning and rearing habitat have been identified as a watersheds to re-engineer by the FHEP (Uphoff et al., 2017). The land areas surrounding the middle and lower portions of American shad spawning and rearing habitat are primarily forested and have been identified as conservation watersheds (Uphoff et al., 2017). Despite the intensity of development in some portions of the Potomac watershed, relative abundance of juvenile American shad, as estimated by the MD DNR Potomac River Striped Bass Juvenile Seine Survey, has increased over time (1959-2019). The two most abundant year classes detected as YOY by the survey were 2015 and 2019.

Suggested management, monitoring actions and restoration efforts:

- 1) Identify the contribution of Potomac River origin American shad to mixed stock ocean bycatch (near term, high priority).
- 2) Reduce or eliminate harvest/bycatch of Potomac River origin American shad in ocean fisheries (near term, high priority)
- 3) Prioritize conservation of natural land cover throughout the lower Potomac watershed (ongoing, long term, high priority).

- 4) Continuation of expansion of commercial and recreational fisheries on non-native predators (Blue catfish and Flathead catfish) in the Potomac River (ongoing, high priority).
- 5) Collection and submission of biological samples (i.e. American shad fin clips) to the U.S. Geological Survey for their effort in building a comprehensive genetic tissue repository for alosine species (Starting in 2021, high priority).

Literature Cited

Uphoff, J. H., Jr., and coauthors. 2017. Marine and estuarine finfish ecological and habitat investigations. Performance Report for Federal Aid Grant F-63-R, Segment 7, 2016. Maryland Department of Natural Resources, Annapolis, Maryland.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Marine Resources, Region 3

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30 October 2020

Caitlin Starks
Shad and River Herring FMP Coordinator
Atlantic States Marine Fisheries Commission
1050 N Highland St #200
Arlington, VA 22201

Dear Ms. Starks,

This letter is in response to the ASMFC Shad and River Herring Technical Committee's (S/RH TC) request for a response to the stock status determinations for the Hudson River in the 2020 American Shad Benchmark Stock Assessment. Responses to the three questions from the S/RH TC are presented below.

- *Identify areas of concern identified in the assessment (e.g. stock status, data deficiencies preventing stock status determination, habitat issues)*

The NYS DEC agrees with the stock status determinations for the Hudson River American shad stock. The following text provides additional information on the decline in Hudson River shad further supporting the depleted stock status determination:

- **Overfishing:** The Hudson stock has experienced several overfishing events dating back to as early as the mid-1800's (Harper's Weekly 1872). When using commercial landings (Figure 1) as a proxy for abundance, the stanzas that occurred accurately track the overfishing events. The first peak in harvest occurred in 1880 followed by the first documented decline in 1896. According to the US Fish Commission (1896), this decline was attributed to increasing demand for shad and improving methods of capture. There was little to no fishing occurring from the turn of the 20th century up until the 1930's. High levels of sustained harvest, greater than one million kg annually, began in 1936 continuing through the WWII years until about 1950. The harvest during WWII, nearly ten years, ranged from 1.1 to 1.7 million kg. A sharp decline followed in the late 1940's. The 18 million kg of landings indicates the stock was very robust to allow such high sustained harvest and surprisingly left the stock large enough and with some resilience to recover. However, this recovery was short-lived, and the stock experienced another decline in the late 1950's as fishers returned home from the war to continue their business of fishing. Landings remained low through the 1960's and 1970's. During this time period, the Hudson was experiencing crucial habitat issues, including pollution and massive habitat loss which complicated and slowed recovery. Following the Federal Water Pollution Control Act Amendments of 1972 and the Clean Water Act of 1977, water quality in the Hudson improved and by 1980 a short-lived resurgence of landings occurred averaging 310,000 kg annually through 1988. The final decline, that persists today,

began in 1998. Hattala and Kahnle (ASMFC 1998) found the spawning stock experienced excessively high mortality and that mortality seriously reduced the abundance of adults. Production of young-of-year shad collapsed within a generation and since 2002, the stock has been in recruitment failure with little to no signs of recovery.

During the last decline, in addition to the traditional in-river fishery, a directed ocean commercial fishery for American shad developed in the mid to late 1980's continuing through the 1990's. This fishery likely developed to supplement income due to restrictions in coastal waters that were implemented for striped bass recovery during that time. In the early 1990's, noticeable changes (disappearance of larger fish, increasing annual mortality) began to occur in the Hudson and other coastal stocks (ASMFC 1998). Because of the difficulty in differentiating ocean harvest to individual stocks, the directed ocean fisheries were phased out from 1990 to 2005 (ASMFC 1999). However, following the ocean closure there was no recovery of the Hudson stock, and the continuing in-river fishery exacerbated the recruitment collapse. New York closed all fisheries for American shad in 2010.

Lastly, late winter and early spring mixed-stock fisheries in large coastal bays, such as Delaware Bay, continue to harvest the Hudson stock. Recent genetics studies (Waldman et al. 2014; Bartron et al. in prep) indicate 25-50% of shad captured in mixed-stock fisheries in Delaware Bay are Hudson stock depending on the location of capture and the type of genetic analysis applied. In addition to coastal bay harvest, incidental bycatch of American shad occurs in several Federal fisheries along the Atlantic coast. However, stock composition of this bycatch is unknown and cannot be assigned to an individual stock. Losses of shad to ocean commercial bycatch may have contributed to the most recent decline in the Hudson stock, but the magnitude of such losses is essentially unknown.

- **Habitat Loss:** The historical record of overfishing events was confounded by additional effects of in-river habitat loss and alteration which likely affected abundance of American shad in the Hudson River Estuary. Substantial destruction of shad spawning and nursery habitat occurred from the late 1800's through the mid 1900's from dredge and fill in the upper third of estuary during development and maintenance of the navigation channel from New York City to Albany/Troy (Miller and Ladd 2004). Over 4,500 acres of river bottom were destroyed or altered; this loss was likely a factor in shad decline in the late 1800's and early 1900's.

Major habitat alteration ended in the 1950's and it is unlikely that it has been a factor in the most recent stock decline. However, such habitat loss may influence the rate of stock recovery. In addition to actual physical losses were pollution events such as the massive dissolved oxygen blocks in a large portion of the spawning and nursery habitat (Albany pool) and most likely in New York harbor in the 1960's through early 1970's (NYSDEC 1995). Declines in water quality in shad spawning and nursery areas have been suggested as a cause of recent shad decline in some east coast estuaries. However, this may not be occurring in the Hudson where water quality has improved since the implementation of the Clean Water Act in 1977.

Young American shad in the river are also lost to mortality due to various cooling water intakes. Cooling systems at some power generating stations have been converted to (Albany Steam to Bethlehem Energy Center), or built (Athens) as, closed cycle cooling. The NYSDEC is addressing take at all other water intakes.

- *Identify additional information not considered in the assessment stock status determination that provides more context on the stock, fishery, etc. (e.g. more recent years of data, SFMP metrics and performance, survey trends)*

NYS DEC feels that all available and appropriate information was considered in the stock status determination. Data from recent years, 2018-present, suggest no change in stock status relative to the assessment.

- *Suggest management or monitoring changes, or restoration efforts that would improve shad stock based on the information above*

Suggested management, monitoring changes and restoration efforts:

- Reduce/eliminate harvest of Hudson shad in mixed-stock fisheries and ocean bycatch (near-term; high priority)
- Identify stock composition of bycatch occurring in Federal fisheries and quantify impact to the Hudson stock (near-term; high priority)
- Implement habitat restoration actions identified in the Hudson River Estuary Habitat Restoration Plan (Miller 2013) to restore high-quality spawning, nursery and refuge habitats for American shad (on-going, long-term; high priority)
- Continuation of fishery closure until recovery targets (Hudson River American Shad Recovery Plan, in prep) are met and stocks are robust enough to support sustainable harvest (long-term; high priority)

Sincerely,

Wes Eakin

Fisheries Biologist

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Division of Marine Resources

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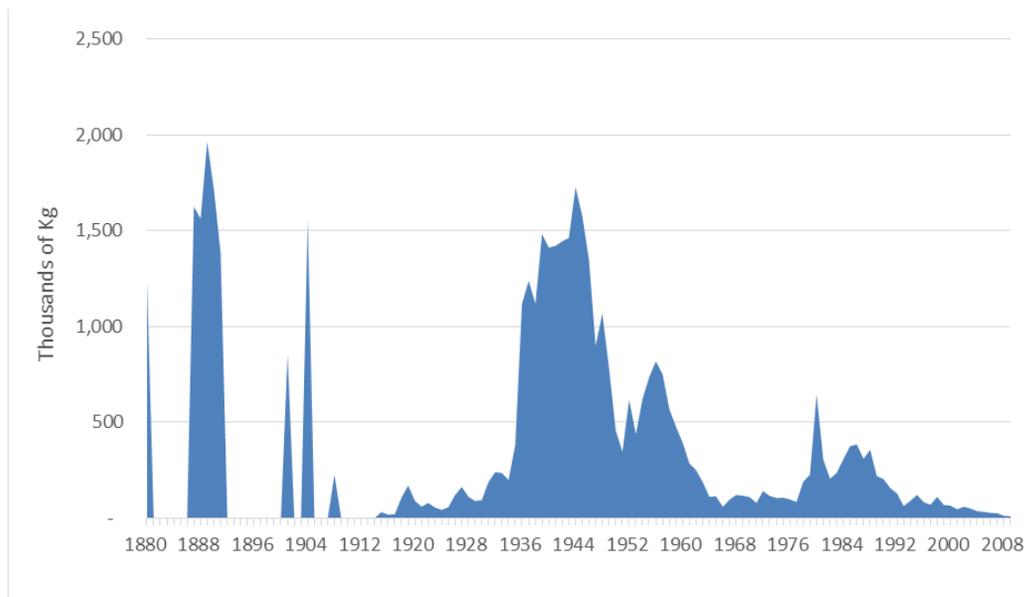


Figure 1. Historic commercial fishery landings of American shad in the Hudson River Estuary, 1880-2009.

State of Maine Response to TC questions Regarding Assessment, SFMP and Data Sources

Unknown American Shad Status and Assessment Findings

In August 2020 the American Shad Assessment Committee determined that American Shad population status in Maine is unknown. In August of the same year the River herring Management Board approved Maine's SFMP which allows recreational anglers a 2-fish recreational limit per day using hook and line and maintains the commercial fishing closure for American Shad. The River Herring Technical Committee has requested that all states provide context that may explain inconsistencies between state SFMPs and the Assessment findings or provide additional justification for states SFMP's.

The two major areas of concern addressed in the assessment regarding Maine data were time series length and validity of count data collected at monitored fishways on Maine's larger rivers. There were additional concerns regarding collections and analysis of biological data from commercial and recreational fisheries.

The run count time series for several of Maine fishways do meet the 10-year data requirement used as the minimum standard for time series data used in ASMFC assessments. The issue is the State does not believe that the counts reflect the true abundance of American shad in the system. Many fishways throughout New England experience the same issue with lack of effective upstream passage of spawning shad and shad counts at fishways. The recent performance standards attempted at some FERC licensed fishway locations seek to achieve passage of 75-percent of the shad below dams with fishways. This indicates that dams remain a significant barrier to spawning shad populations and total run count numbers at dams with fishway may not be possible.

The Assessment Committee agreed with the State's determination and decided that they were not confident that the counts should be used to determine abundance under the rigor of the assessment document. The Committee made no conclusion regarding the abundance of shad in Maine.

Assessment Document vs Approved SFMP

In August 2020 the State of Maine submitted a statewide SFMP for American shad. The basis for the plan and the subsequent management actions are based on run counts at passage facilities throughout the state and the long-standing JAI (1979-2021) used to monitor annual production in the assessment.

Though the run counts are not comprehensive enough to determine stock status of individual systems, they do provide relative abundance estimates over long periods of time. These data, when analyzed with flow and water temperature, provide the ability to compare relative abundance and justification for the state's 2 fish recreational limit. In general, statewide run counts continue to increase at locations where the state maintains counting locations. The JAI series information was used by the assessment committee and currently tracks juvenile production in the Merrymeeting Bay region.

The management responses in the Maine SFMP are significant and will effectively close waters to any harvest should the state not meet the 25-th percentile or production metrics. The metrics are a reasonable measure of relative abundance and used to measure changes in abundance in several sport fisheries.

Calculation of Biological Metrics from Recreational and Commercial Catches

The State of Maine submits an annual request for de minimis status regarding American shad. The de minimis status granted through the review of the PRT and FMP process acknowledge

“that the under the existing condition of the stock and scope of the fishery, conservation and enforcement actions taken by an individual state would be expected to contribute insignificantly to a coastwide conservation program required by a Fishery Management Plan or Amendment.”

The de minimis status provides relief to the state from having to collect biological data from commercial and recreational catches that would make insignificant contributions to the assessment or other management actions. The poor physical condition and low abundance of shad captured at many of our counting facilities prevent the responsible collection of biological data for age, sex, length, weight and mortality estimates. At some facilities the number of returns does not meet the sample number required to conduct the calculations.

Recommendation

The restoration efforts that would be most helpful would be removal of significant barriers to upstream passage. This may enhance production, increase abundance and provide more opportunity to collect biological data through additional sampling methods without taking a significant portion of the returns to a system. A statement by ASMFC or relevant document that the states could use during the FERC relicensing process or issuance of Water Quality Certificates would be helpful.

Commonwealth of Massachusetts Response to TC questions Regarding the American Shad Stock Assessment and Sustainable Fishery Management Plan

MA Division of Marine Fisheries – December 7, 2020

The Atlantic States Marine Fisheries Commission (ASMFC) Shad and River Herring Technical Committee (TC) requested that all states provide context that may explain inconsistencies between state American Shad (*Alosa sapidissima*) SFMPs and stock assessment findings or provide additional justification for states Sustainable Fishery Management Plans (SFMP). This response from the MA Division of Marine Fisheries (DMF) addresses questions over the unknown status shad in the Merrimack River.

ASMFC Shad and River Herring TC Questions

- *Identify areas of concern identified in the assessment (e.g. stock status, data deficiencies preventing stock status determination, habitat issues)*

The ASMFC American Shad Stock Assessment Sub-committee (SAS) determined in August 2020 that the American Shad population status in the Merrimack River is unknown. The SAS stated that there was not enough data to determine abundance status, and highlighted deficiencies with low age samples in some years that prevent a complete series of 3-year averages of mortality estimates. The SAS also noted the absence of a JAI index and an increasing trend in adult spawning run counts for 2005-2017.

- *Identify additional information not considered in the assessment stock status determination that provides more context on the stock, fishery, etc. (e.g. more recent years of data, SFMP metrics and performance, survey trends)*

The most recent Massachusetts Sustainable Fishing Plan for American Shad was approved by the ASMFC Shad and River Herring Management Board on February 9, 2019. The MA shad SFMP allows a recreational harvest with a 3-fish bag limit. The sustainability metric is derived from the adult shad lift count series at the Essex Dam from 1983-2017. The benchmark is 210 shad/lift day and serves as a spawning run threshold for management action. Three consecutive years below this benchmark will trigger consultation between MA Division of Fish and Wildlife and DMF to discuss reducing recreational harvest. The spawning run count series does not produce a biomass reference. However, it does provide a 38-year index of spawning adults with an increasing trend in the last 10 years. We view this as a successful and valuable time series that is supported by annual review from the multi-agency Merrimack River Technical Committee (MRTC) to maintain and improve data quality.

The MA SFMP also includes a warning threshold on shad mortality. Amendment 3 defined the shad mortality warning threshold as the level of total instantaneous mortality (Z) that resulted in a female spawning stock biomass that was 30% of the total female spawning stock biomass in a stock that experienced only natural mortality ($Z = M$). Amendment 3 provides benchmark values for New England shad runs of $Z_{30} = 0.98$ and $A_{30} = 0.62$ (annualized mortality). The Z_{30} benchmark was adopted by the SFMP as a warning threshold until a longer Merrimack River Z time series is recorded or further ASMFC recommendations are made. The total instantaneous mortality rate was estimated using the Chapman-Robson method, regression-based estimates, and catch curves from repeat spawning age data. The Chapman-Robson method is a probability-based estimator that has been shown to be more accurate and less biased than the linear regression-based catch curves, especially when sample size is small. Shad ages 5 through 10 were used in the analysis. The suitability of the 2001-2017 Merrimack River mortality

estimates may be limited by many factors including small sample sizes, a brief data series, combined genders in the estimate, and the assumption that all mortality is natural. The trend to date is that Merrimack River shad mortality was at or below the Z30 until 2013, when it increased above the threshold and has remained high since. While Z has recently increased, total length for both males and females has been relatively stable since 1999. The mortality warning threshold was not exceeded under the 2012 SFMP but has been exceeded each year since 2013. With the recent conditions of increasing spawning run stock, higher mortality estimates resulting from increased recruitment is not unexpected, although this dynamic should be reviewed and considered annually in the MA shad compliance report.

- *Suggest management or monitoring changes, or restoration efforts that would improve shad stock based on the information above.*

Merrimack River Shad Mortality. The time series for Merrimack River shad aging reported in the SFMP is from 1991-2017. The SAS identified concerns with low sample sizes of shad age samples impacting the time series and generation of 3-year averages. The most serious lapses in sample sizes occurred at the start of the time series and 2013. The MA SFMP identifies concerns with the time series and commits to working on these issues. Further, recent changes with state agency staff and staff serving on the Merrimack River Technical Committee allows the opportunity to discuss goals, and focus new staff on sampling targets and the need to improve the data quality and utility of mortality estimates.

Juvenile Abundance Index for American Shad. There have been no historical or recent efforts to create a juvenile abundance index on the Merrimack River. The State and Federal agencies with jurisdiction over shad in the Merrimack River have discussed an interest in developing a JAI index. Concerns have been expressed over the high variability inherent in shad JAI indices on the East Coast. Most importantly, no identified funding source is available to support a JAI index project and associated staffing. We also raise the question over whether a state that has been granted *de minimis* status for shad can be exempted from certain biological sampling requirements such as a JAI index.

Repeat Spawning Ratio. Ongoing shad scale aging will provide data on the ratio of repeat spawners in the spawning run. Repeat spawning ratio data are available for the Merrimack River from 2004-2017. The time series is too brief to allow the setting of a repeat spawning ratio benchmark or to discern any trends. This data collection will continue and be reported in the River Herring and American Shad ASMFC Compliance Report annually and considered further with the next SFMP review.

Restoration Efforts. Poor passage at mainstem dams and many tributaries without passage is presumed to be a significant limitation to increasing shad and other diadromous fish populations in the Merrimack River watershed. Ongoing annual review with hydropower dam owners are essential to identify operation and maintenance issues that can impact shad passage. The MRTC has annual pre and post-season meetings with mainstem hydro owners to review in-season actions and address issues. However, recommended improvements are not always adopted. These efforts will continue, and the concerns highlighted by the SAS review will contribute to fish lift objectives pursued by this inter-agency review.

The Pawtucket Dam, the second mainstem dam on the Merrimack in Lowell, MA, is currently in the relicensing process. The Pawtucket Dam has provided poor fish passage, especially for American shad, for decades and is seen as a major impediment to the restoration of alosine to the Merrimack River. Concurrently, management agencies involved with the Merrimack River are drafting a Comprehensive Plan for fish restoration in the watershed that will set target population levels and prioritize restoration efforts. This document should be finalized and filed with FERC in early 2021.



ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

STEPHEN W. MURPHEY
Director

To: Caitlin Starks, ASMFC

CC: Katy West, Kathy Rawls, Chris Batsavage, Jeremy McCargo

From: Holly White

Date: November 6, 2020

Subject: NC Response to 2020 American Shad Benchmark Stock Assessment

On September 28, 2020 the ASMFC Shad and River Herring TC tasked members to provide a written response to the 2020 American Shad Benchmark Stock Assessment results for systems where harvest is allowed and the assessment determined the stock status to be unknown, unsustainable, or depleted. For North Carolina, the Tar-Pamlico River and Cape Fear River systems both received unknown stock status determinations. Both systems are managed under the 2018-2022 Sustainable Fishery Management Plan (SFMP) for North Carolina which allows for monitored recreational and commercial harvest. North Carolina accepts the stock status determinations for the Tar-Pamlico River and Cape Fear River systems. Despite the findings of the stock assessment, North Carolina does not recommend any changes to monitoring or management for these systems and supports continued use of the SFMP to monitor trends in adult abundance and harvest.

Tar-Pamlico River

Areas of Concern

The 2020 American Shad Benchmark Stock Assessment found the Tar-Pamlico River system adult total mortality rate and adult abundance to be unknown due to the lack of young-of-the-year data and no trend in the adult indices from 2005-2017.

1. Stock Status

From Section 3.15.8 Stock Status and Conclusions of the 2020 American Shad Benchmark Stock Assessment report:

Mortality

Juvenile mortality status is unknown due to lack of data to make this determination. The adult mortality status is also unknown as there was no estimate of female total mortality in 2017 and the delay-difference model experienced diagnostics problems and could not be used for status determination. The most recent three-year average female total mortality was 0.87 in 2007 which is below the Z40% threshold (1.07).

There was a declining trend in female mean length from a long-term data set (1979-2017), but no trend from an additional short-term data set (2000-2017) detected. There were no YOY

recruitment data to compare to mean length trend analyses.

Abundance

Abundance status is unknown. There were no YOY abundance data available and no trend detected in adult abundance since 2005.

2. Data Deficiencies Preventing Stock Status Determination

There is no YOY abundance data available for the Tar-Pamlico River system.

Additional Information Not Considered in the Stock Assessment

1. Recent years of data

In 2017, exploratory juvenile abundance sampling for striped bass using trawl and seine nets was initiated in the Tar-Pamlico and Neuse rivers using historical sampling locations (1977-1983) where possible. NCDMF will continue to develop and refine abundance surveys in the Tar-Pamlico and Neuse rivers to standardize sampling methods. Sampling in the Tar-Pamlico and Neuse rivers will occur, indefinitely, starting early June and will continue through late October at fixed seine and trawl locations. While the focus of the survey is to obtain juvenile striped bass, the survey may also intercept American shad. Therefore, we believe this survey may be of use for a YOY abundance, once a more robust set of data is available for evaluation.

2. SFMP Metrics

The Tar-Pamlico River is included under the 2018-2022 NC SFMP for American Shad with two sustainability parameters: female relative abundance and female relative F.

Relative abundance of female American shad is derived from the electrofishing survey in the Tar River. The annual estimates have been relatively stable over the time series except for two notably high years of abundance in 2003 (1.49) and 2004 (1.26). The index was below the threshold (0.384) in 2002, 2006, 2007, 2009, 2018 and 2019. Updates are unavailable for 2020 due to the Covid-19 pandemic and mandatory suspension of sampling by NCDMF and NCWRC due to concerns for staff and the public safety.

Estimates of relative F for female American shad derived from the electrofishing survey were below the threshold from 2003 to 2006. These estimates of female relative F exceeded the threshold in 2002, 2007, 2009, and 2013. Since 2013, the annual estimate has remained well below the threshold consistent with a decline in commercial landings.

Suggested Management or Monitoring Changes

North Carolina does not recommend any change to management or monitoring for the Tar-Pamlico system. A management response for striped bass has been in effect since March 18, 2019 prohibiting the use of all gill nets upstream of the ferry lines from the Bayview to Aurora Ferry in the Tar-Pamlico River and the Minnesott Beach and Cherry Branch ferry in the Neuse River (Proclamation M-6-2019). This prohibition directed by the N.C. Marine Fisheries Commission and was in response to Supplement A to Amendment 1 to the N. C. Estuarine Striped Bass FMP, and was intended to reduce striped bass fishing mortality, but essentially protected American shad as well by removing gill nets from the normal fishing grounds for American shad in the Tar-Pamlico River. In 2019, no American shad were commercially harvested from the Tar-Pamlico River, in 2020 only 129 pounds were harvested from the system.

Based on the current management response and the reduction in commercial harvest from the Tar-Pamlico River, the system is not in need of any additional management measures.

Cape Fear River

The 2020 American Shad Benchmark Stock Assessment found the Cape Fear River system adult total mortality rate and adult abundance to be unknown due to the lack of young-of-the-year data and no trend in the adult indices from 2005-2017.

Areas of Concern

1. Stock Status

From Section 3.17.9 Stock Status and Conclusions of the 2020 American Shad Benchmark Stock Assessment report:

Mortality

Juvenile mortality status is unknown due to lack of data to make this determination. Adult mortality status is sustainable as the three-year average catch in 2017 was less than the delay difference model median TAC estimate.

There was a declining trend in female mean length from a long-term data set (1984-2017), but no trend from an additional shorter-term data set (2001-2017) detected. There were no YOY recruitment data to compare to mean length trend analyses.

Abundance

Abundance status is unknown. There were no YOY abundance data available. There was an increasing trend in adult abundance (two data sets) detected since 2005.

2. Data Deficiencies Preventing Stock Status Determination

There were no YOY abundance data available for the Cape Fear River system.

Additional Information Not Considered in the Stock Assessment

1. Recent years of data

In 2017, exploratory juvenile abundance sampling using trawl and seine nets was initiated in the Cape Fear River and its tributaries using historical sampling locations (1975-1978) where possible. NCDMF will continue to develop and refine the abundance survey in the Cape Fear River to standardize sampling methods. Sampling in the Cape Fear River, including the main stem, Northeast Cape Fear, and between Lock-and-Dams #1 and #2, will occur, indefinitely, starting early June and will continue through late October at fixed seine and trawl locations. While the focus of the survey is to obtain juvenile striped bass, the survey may also intercept American shad. Therefore, we believe this survey may be of use for a YOY abundance, once a more robust set of data is available.

2. SFMP Metrics

The Cape Fear River is included under the 2018-2022 NC SFMP for American Shad with two sustainability parameters: female relative abundance and female relative F.

Relative abundance of female American shad from the electrofishing survey in the Cape Fear River was low from 2006 through 2011, and values were below the threshold (0.115). Since 2011, relative abundance of female American shad has been above the threshold and continued

to increase through 2015. Estimates of female relative F have remained below the threshold since 2012. Updates are unavailable for 2020 due to the Covid-19 pandemic and mandatory suspension of sampling by NCDMF and NCWRC due to concerns for staff and the public safety.

Suggested Management or Monitoring Changes

North Carolina does not recommend any management measures or monitoring changes for the Cape Fear River system based on assessment findings. Monitoring under the current SFMP is sufficient to detect any changes in abundance. Annual updates to sustainability parameters have not exceeded their thresholds since 2011 and 2012, respectively. Additionally, the 2020 Benchmark Stock Assessment noted that there is an increasing trend in adult abundance, likely a sign of improved passage at Lock and Dam 1.

South Carolina Department of Natural Resources



Robert H. Boyles, Jr.

Director

Emily C. Cope

Deputy Director for
Wildlife and Freshwater Fisheries

TO: Shad and River Herring TC

FROM: Bill Post

DATE: 11/12/2020

SUBJECT: Response to Benchmark Stock Assessment

The purpose of this document is to respond to requested questions regarding conclusions and recommendations made in the most recent benchmark stock assessment for American shad in South Carolina Rivers.

Winyah Bay

- *Identify areas of concern identified in the assessment (e.g. stock status, data deficiencies preventing stock status determination, habitat issues)*

Abundance

Abundance status is unknown. There were no Young of Year (YOY) abundance data available. There have been conflicting trends in adult abundance since 2005, with an increasing trend detected from the Black River Commercial CPUE and no trend detected from the Great Pee Dee River or Waccamaw River Commercial CPUE, further confounding assessment of abundance conditions in recent years.

Mortality

Juvenile mortality status is unknown due to lack of data to make this determination. The adult mortality status is also unknown, as the Delay-Difference models experienced diagnostics problems and could not be used for status determination.

There was a declining trend detected in female mean length from 1981-2015, but no YOY recruitment data to compare to mean length trend analyses.

- *Identify additional information not considered in the assessment stock status determination that provides more context on the stock, fishery, etc. (e.g. more recent years of data, SFMP metrics and performance, survey trends)*

Response

Due to the growing concerns to demonstrate sustainable fisheries in SC rivers, all fishery independent gill netting was relocated to the Santee and Waccamaw Rivers, to be used as “reference” rivers for the State. Those data (currently 2011-2020) will meet the minimum time series requirement and will be available for the next benchmark stock assessment.

Due to the growing concerns to demonstrate sustainable fisheries in SC rivers, electrofishing sampling for YOY juvenile shad began in 2011 and has occurred every year since. These data (currently 2011-2020) will meet the minimum time series (ten years) and will be available for the next benchmark stock assessment.

Santee Cooper System

- *Identify areas of concern identified in the assessment (e.g. stock status, data deficiencies preventing stock status determination, habitat issues)*

Abundance

Abundance status is unknown. There were no YOY abundance data available. There have been conflicting trends in adult abundance since 2005, with an increasing trend detected from the Cooper River Recreational Creel Survey and no trend detected from the Santee River Adult Gill Net Survey or Santee River Commercial CPUE, further confounding assessment of abundance conditions in recent years.

Mortality

Juvenile mortality status is unknown due to lack of data to make this determination. The adult mortality status is also unknown, as the Delay-Difference models experienced diagnostics problems and could not be used for status determination.

There were no YOY recruitment data to compare to mean length trend analyses.

- *Identify additional information not considered in the assessment stock status determination that provides more context on the stock, fishery, etc. (e.g. more recent years of data, SFMP metrics and performance, survey trends)*

Response

Due to the growing concerns to demonstrate sustainable fisheries in SC rivers, all fishery independent gill netting was relocated to the Santee and Waccamaw Rivers, to be used as “reference” rivers for the State. Those data (currently 2011-2020) will meet the minimum time series requirement and will be available for the next benchmark stock assessment.

Due to the growing concerns to demonstrate sustainable fisheries in SC rivers, electrofishing sampling for YOY juvenile shad began in 2011 and has occurred every year since. These data (currently 2011-2020) will meet the minimum time series (ten years) and will be available for the next benchmark stock assessment.

Ace Basin

- *Identify areas of concern identified in the assessment (e.g. stock status, data deficiencies preventing stock status determination, habitat issues)*

Abundance

Abundance status is unknown. There were no YOY abundance data available and no trend detected in adult abundance since 2005.

Mortality

Juvenile mortality status is unknown due to lack of data to make this determination. The adult mortality status is also unknown, as the Delay-Difference models experienced diagnostics problems and could not be used for status determination.

There were no mean length data available for trend analyses.

- *Identify additional information not considered in the assessment stock status determination that provides more context on the stock, fishery, etc. (e.g. more recent years of data, SFMP metrics and performance, survey trends)*

Response

Due to the growing concerns to demonstrate sustainable fisheries in SC rivers, electrofishing sampling for YOY juvenile shad began in 2011 and has occurred every year since. These data (currently 2011-2020) will meet the minimum time series (ten years) and will be available for the next benchmark stock assessment.

Savannah River

- *Identify areas of concern identified in the assessment (e.g. stock status, data deficiencies preventing stock status determination, habitat issues)*

Abundance

Abundance status is unknown. There were no YOY abundance data sets with appropriate time series available and no trend detected in adult abundance (two data sets) since 2005.

Mortality

Juvenile mortality status is unknown due to lack of data to make this determination. The adult mortality status is also unknown, as the Delay-Difference models experienced diagnostics problems and could not be used for status determination.

There were no mean length data available for trend analyses.

- *Identify additional information not considered in the assessment stock status determination that provides more context on the stock, fishery, etc. (e.g. more recent years of data, SFMP metrics and performance, survey trends)*

Response

Since this is a shared waterbody bordering SC and GA, both States share data in order to comply with sustainability requirements.

As part of an ongoing sampling program, GADNR conducts electrofishing for spawning adult shad in Augusta GA. This sampling program's dataset was recently approved by the ASMFC S&RH TC as GA's method to demonstrate sustainability. These data (currently 2010-2020) will meet the minimum time series (ten years) and will be available for the next benchmark stock assessment.

Due to the growing concerns to demonstrate sustainable fisheries in SC rivers, electrofishing sampling for YOY juvenile shad began in 2011 and has occurred every year since. These data (currently 2011-2020) will meet the minimum time series (ten years) and will be available for the next benchmark stock assessment.

- *Suggest management or monitoring changes, or restoration efforts that would improve shad stock based on the information above.*

Suggested Research Recommendations in the benchmark stock assessment

Commercial Landings and Effort

- Continue and improve compliance with mandatory catch and effort reporting from commercial fishery for all American shad fisheries prosecuted in South Carolina waters.
- Continue the "volunteer CPUE" series to compare with CPUE series developed from comprehensive mandatory reporting database.
- Convert volunteer commercial catch and effort from field reports into digital format so raw data are available for future analysis.
- Collect age, length, weight, and spawning history information from shad caught in commercial fisheries in the Santee River, Winyah Bay system, Savannah River, and Edisto River.
- Conduct an age validation study of American shad from South Carolina rivers (especially, Santee River, Winyah Bay system, Savannah River, and Edisto River).

Tagging

- Continued monitoring of river systems (Santee River, Waccamaw River, and Edisto River) on rotating basis (yearly rather than a 3-year schedule).

- Improvements to tagging design (e.g., develop high-reward design, telemetry studies to get estimates of fall back, double tagging study to estimate tag loss, and tag- mortality study) to improve relative exploitation estimates. Conduct tagging studies for duration of shad migration and continue to collect effort information from sampling collections (e.g., soak time, net length, and mesh size) to permit development of CPUE calculations.

Creel Surveys

- Continue to conduct creel surveys in rivers with notable recreational fisheries (Savannah River and Cooper River). If necessary, conduct creel surveys on a rotating basis.

Fish Passage

- Develop species specific upstream and downstream passage efficiency at all rivers with priority given to Santee-Cooper system dams.
- Develop species specific counts at Pinopolis fish-lock on the Cooper River. Juvenile Abundance Index
- Continue to develop reliable indices of juvenile abundance.

General

- Collect environmental covariates (tidal stage, flood stage, flow rate, water temperature, cloud cover, water clarity, annual precipitation, etc.) to aid development of CPUE indices.

Response by priority

Many recommendations in the list above have already been initiated, but simply did not meet the minimum time series requirement to be included in the most recent benchmark stock assessment. These datasets will continue and should be included for the next benchmark stock assessment.

SC recognizes issues with using solely scales for aging and has begun to initiate studies involving both otoliths and scales with hopes of examining known errors associated between these structures. With any luck, correlation can be developed between the two, allowing use of decades of collected scale age data. Additionally, we will begin collecting and examining otoliths for aging purposes rather than scales.



MARK WILLIAMS
COMMISSIONER

TED WILL
DIRECTOR

Memo

TO: Shad and River Herring TC

FROM: Jim Page

DATE: 12/10/2020

SUBJECT: Shad Management on the Altamaha and Savannah Rivers

By way of this memo and pursuant to the request by ASMFC for additional information on information that may have impacted the results of the most recent shad stock assessment, I would like to offer the following information for the Savannah and Altamaha Rivers:

- *Identify areas of concern identified in the assessment (e.g. stock status, data deficiencies preventing stock status determination, habitat issues)*

Savannah River: The assessment findings were that the population had an “unknown status” but harvest remained allowed through the SFMP. Specifically, conclusions were not that abundance was not declining but rather that it was unknown and no trend was detected. No significant data deficiencies for adult fish were identified for the assessment period; however, in recent years the Commercial drift-net CPUE data that serves as the management trigger on the Savannah River has become less available as attrition in the fleet has resulted in a decline in commercial participation (0 reported fishing effort in 2019 and 2020 seasons) and a switch in preferred gear (from drift-net to set-net). As such, this drastic decline in recent years has certainly impacted calculated CPUEs from where they would have been several years ago when many more fishermen were involved. To combat this, the TC approved us in June 2020 to switch our management trigger from the commercial CPUE to a CPUE derived from fishery-independent efforts we conduct via electrofishing at the New Savannah Bluff Lock and Dam (NSBLD). These efforts at the NSBLD have been ongoing since 2010 and we believe will be a much better indicator of stock status, as they won’t rely on an ever-changing commercial fishery presence. Additionally, YOY datasets were excluded in part due to insufficient time series.

Altamaha River: The assessment findings were that the population had an “unknown status” but harvest remained allowed through the SFMP. Specifically, conclusions were not that abundance was not declining but rather that it was unknown due to conflicting trends (one increasing; one unknown. Georgia has maintained a tagging survey for American shad on the Altamaha for 38 years, along with collecting commercial landings, monitoring the commercial fishery via observers, and monitoring the recreational fishery via creel surveys. Suggestions were made on potential changes/improvements for the tagging study, and GADNR staff will consider and deliberate whether to implement any/all of these recommendations.

- *Identify additional information not considered in the assessment stock status determination that provides more context on the stock, fishery, etc. (e.g. more recent years of data, SFMP metrics and performance, survey trends)*

Savannah River: Young-of-year (YOY) data was not included from the Savannah River in the most recent assessment. This exclusion is not based on known or suspected declines in juvenile abundance, but rather from a current lack of the time series (e.g. <10 years) and due to inconsistencies in the dataset. Since 2010, we (GADNR) have conducted seine surveys during the months of July – Sept to collect data on YOY shad. While these efforts have provided us with valuable data when we are able to complete them, there have been many instances when we were unable to conduct sampling. When river levels are high, the sandbars on which we conduct seining are covered in water, and thus we cannot access those sites with seine gear. During extended high-water events, like we've had multiple times since 2010, we are unable to collect data, and thus gaps in the data are created.

Altamaha River: For the exact reasons applicable to the Savannah River (above), YOY data was not included from the Altamaha River in the most recent assessment. Again, this exclusion is not based on known or suspected declines in juvenile abundance, but rather from a lack of time series (<10 years) and inconsistencies in the data set. Since 2010, we (GADNR) have conducted seine surveys during the months of July – Sept to collect data on YOY shad. Just like in the Savannah River, these efforts have provided us with valuable data when we are able to complete them. However, there have been many instances when we were unable to conduct sampling, most notably when river levels are high and sandbars are covered, thereby preventing access for sampling with seines.

- *Suggest management or monitoring changes, or restoration efforts that would improve shad stock based on the information above.*

Outside of the suggested tweaks recommended by the assessment team (e.g. tagging survey), we (GADNR) are continuing to evaluate and discuss possible changes to improve our management of shad. Collectively, we feel we are doing a good job in many aspects of monitoring the shad stock in our rivers, though we are certainly open to improvement. One potential improvement we are considering is the addition of collecting otoliths in addition to scales for aging purposes. As our SFMP indicates, we will continue to keep a keen eye on our shad population and should we observe declines that trigger management measures we will respond accordingly so as to provide protection to our shad stock. It is important to note that sustainability of our stocks continues to be our primary focus.

Conclusion:

On behalf of the GADNR we appreciate your consideration of the aforementioned explanations and hope the information presented above will be helpful in better explaining our data gaps and provide a clearer understanding of what we know. We remain dedicated to ensuring the sustainability of our shad population and will continue to use a variety of tools to best manage our stocks. We thank you for your continued efforts to work alongside us in managing these important resources.



Memo

13 November 2020

TO: ASMFC Shad and River Herring Technical Committee

FROM: Reid Hyle, Florida Fish and Wildlife Conservation Commission

RE: Unknown Stock Status of American Shad and the Sustainable Fishing and Management Plan on Florida's St. Johns River

Florida Fish and Wildlife Conservation Commission

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This memorandum serves as the response from Florida to the ASMFC Shad and River Herring Technical Committee regarding the Benchmark Stock Assessment finding of unknown status for an American Shad population subjected to harvest under a SFMP; St. Johns River Florida.

- *Identify areas of concern identified in the assessment (e.g. stock status, data deficiencies preventing stock status determination, habitat issues)*

The benchmark stock assessment used two trend datasets to assess the St. Johns River Florida stock of American Shad; these were the annual young of the year relative abundance 2007-2017 and adult spawning stock relative abundance 2003-2017. The assessment also evaluated trends in total length of spawners. The conclusion was that the abundance status of the stock could not be determined. The spawning stock index had a significant positive trend from 2005 to 2017. The JAI showed no trend. Power in the surveys was deemed adequate to detect a 50 percent decline in abundance over 10-years so we feel that the population was likely stable or improving during the assessment period since neither index declined over time and mean fork length of males and females both increased.

Additional data that could aid in stock status determination are being collected. Spawner otoliths are available for age composition and size at age starting in 2011 and will be able to provide a time series > 10 years at the next assessment. The collection still needs to be read by two readers with work to ensure good precision, accuracy, and validation. These data will not directly inform mortality estimates for this semelparous population but will provide improved resolution of the maturity schedule and help identify strong year classes.

The assessment found that 90 percent of documented historical spawning habitat is still available to the St. Johns River, FL population below the lowermost barrier. Historical spawning grounds extended from river kilometer 230 to 433 with the most important grounds being between 275 and 360. Approximately 14 kilometers of marginal habitat lies above the barrier and habitats between 230 and 265 were subjected to channelization in the 1930s and 1940s. Most of the core spawning grounds identified in the 1960s and 1970s remains intact. The primary concern with habitat now and going forward is water quantity and quality; climate change and population growth may alter flow patterns in the St. Johns River which is the southernmost spawning population on the Atlantic coast. The pending update to the habitat plan will reflect threats from changes in flow, temperature, and sea level rise.

- *Identify additional information not considered in the assessment stock status determination that provides more context on the stock, fishery, etc. (e.g. more recent years of data, SFMP metrics and performance, survey trends)*

The modern creel survey dataset began in 2011 and was too short to use in the benchmark assessment. Available data through 2020 do not indicate an increase in total effort or harvest (Figures 1 and 2). Angler CPUE has remained stable and has perhaps been higher than was reflected in the 2007 stock assessment wherein there was a recommendation to set a CPUE based restoration target (Figure 3). Data from this time series could be used to ensure that harvest does not increase relative to the fishery independent index of abundance.

The benchmark assessment did state that biological data should be collected from the recreational fisheries where harvest is permitted. That is not feasible for the St. Johns River recreational shad fishery because the creel survey only encounters one or two trips per year that have shad in their possession.

The fishery independent index data for the spawning stock and young-of-the-year could be improved by an increase in statistical power. Samples are collected from a stratified random design which is appropriate but standardization for environmentally driven variance in catchability could be improved. At this time, we feel that the indexes are adequate for a conservative conservation trigger as specified in the SFMP where three consecutive years below the 25th percentile triggers management review and/or action.

- *Suggest management or monitoring changes, or restoration efforts that would improve shad stock based on the information above.*

There is no immediate management change planned at this time. The most recent years of index data are being reviewed because the spawning stock index has been in decline since 2015 (Figures 4,5,6). The juvenile abundance index has remained well above the 25th percentile of that series for all recent years. We are reluctant to attribute the decline in spawning stock abundance to recreational fishing because there has been no increase in effort, catch, or harvest.

Data from the YOY index indicate that flow during the spawning season is the biggest driver of recruitment to the juvenile stage in this system. Age data need to be refined and finalized because the preliminary data suggest that the strong YOY index in 2010 noted in the benchmark assessment was dominate in the spawning stock from 2013 to 2016. These relationships need to be modelled to improve our understanding of the stock-environment-recruitment relationship for this population absent evidence of significant in-river mortality from the fishery.

We also do not know what impact mixed stock fisheries and ocean bycatch are having on sub-adult St. Johns River American Shad. It is notable that St. Johns River, FL shad were recorded from the Delaware Bay fishery.

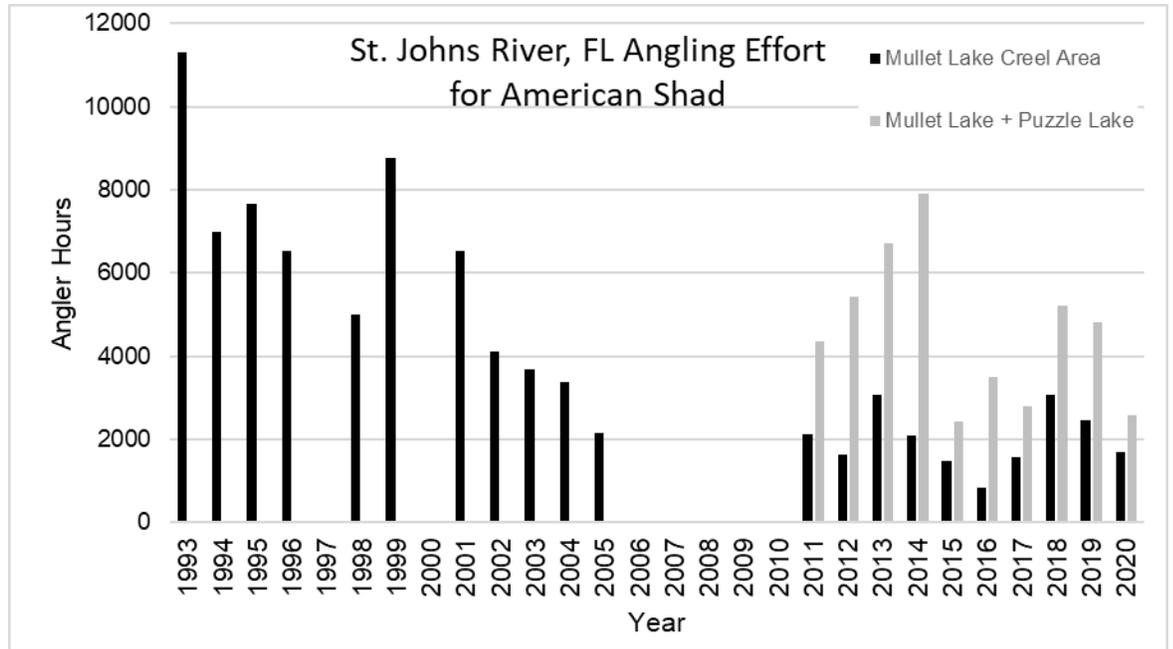


Figure 1. Recreational fishing effort for American Shad in the St. Johns River, FL from 2003 through 2020. A roving creel focused on river kilometer 285 to 298 from 1993 to 2005. An access point creel from 2011 covers river kilometers 278 to 298 via the primary two access points for that stretch of river. The access point creel added the “Puzzle Lake” stratum which is served by a single access point.

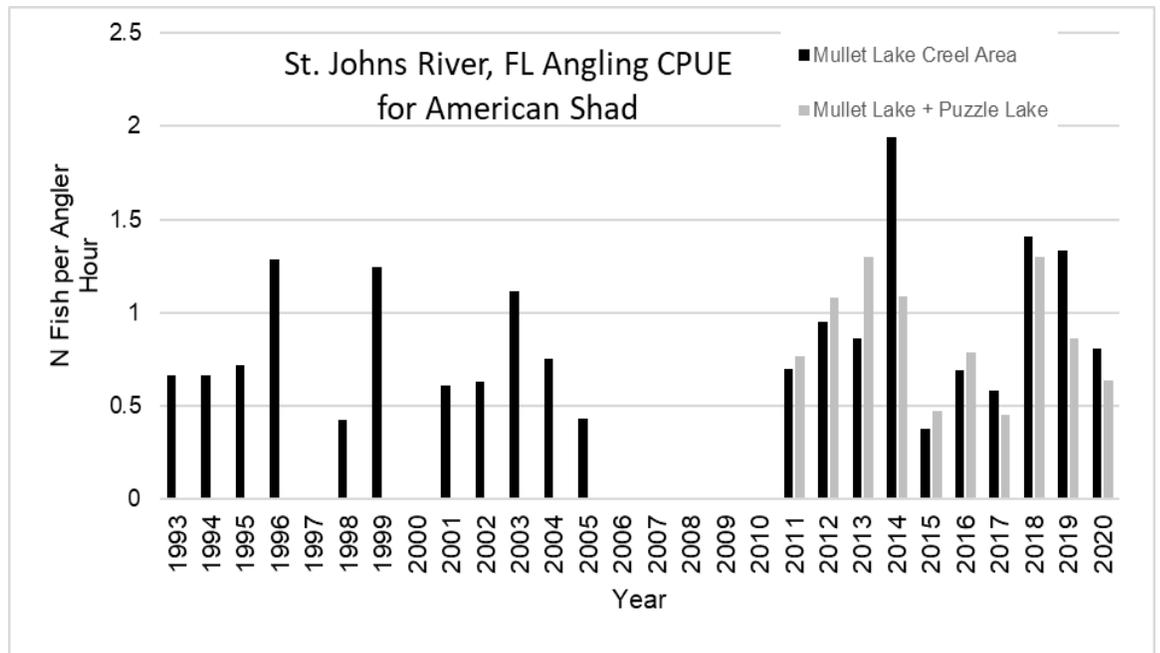


Figure 2. Recreational fishing catch per unit effort for American Shad in the St. Johns River, FL from 2003 through 2020. A roving creel focused on river kilometer 285 to 298 from 1993 to 2005. An access point creel from 2011 covers river kilometers 279 to 298 via the primary two access points for that stretch of river. The access point creel added the “Puzzle Lake” stratum which is served by a single access point.

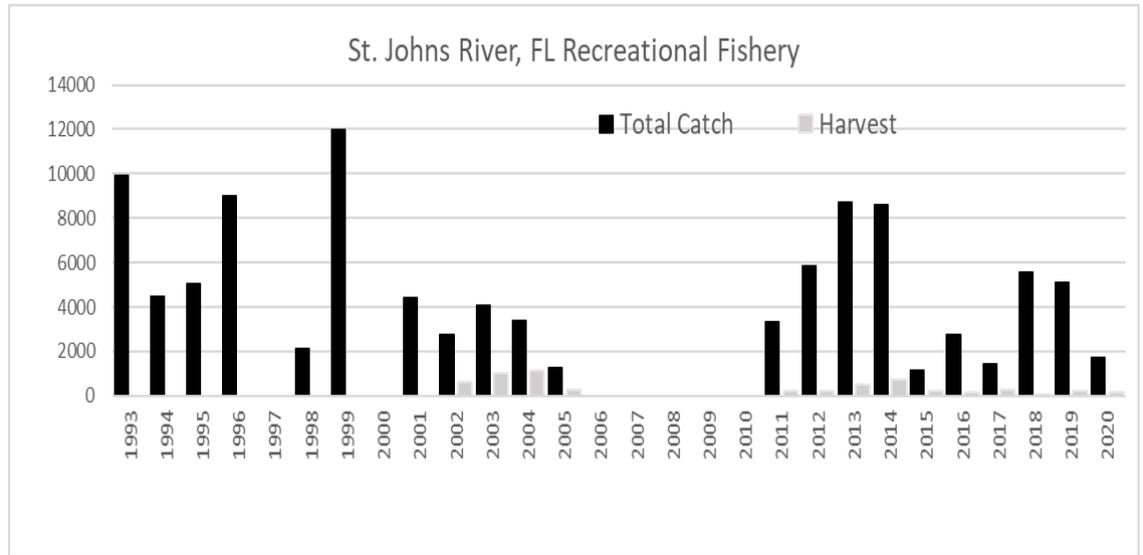


Figure 3. Total catch and harvest of American Shad from St. Johns River, FL from 2003 through 2020. A roving creel focused on river kilometer 285 to 298 from 1993 to 2005. An access point creel from 2011 covers river kilometers 279 to 298 via the primary two access points for that stretch of river. The access point creel added the “Puzzle Lake” stratum which is served by a single access point.

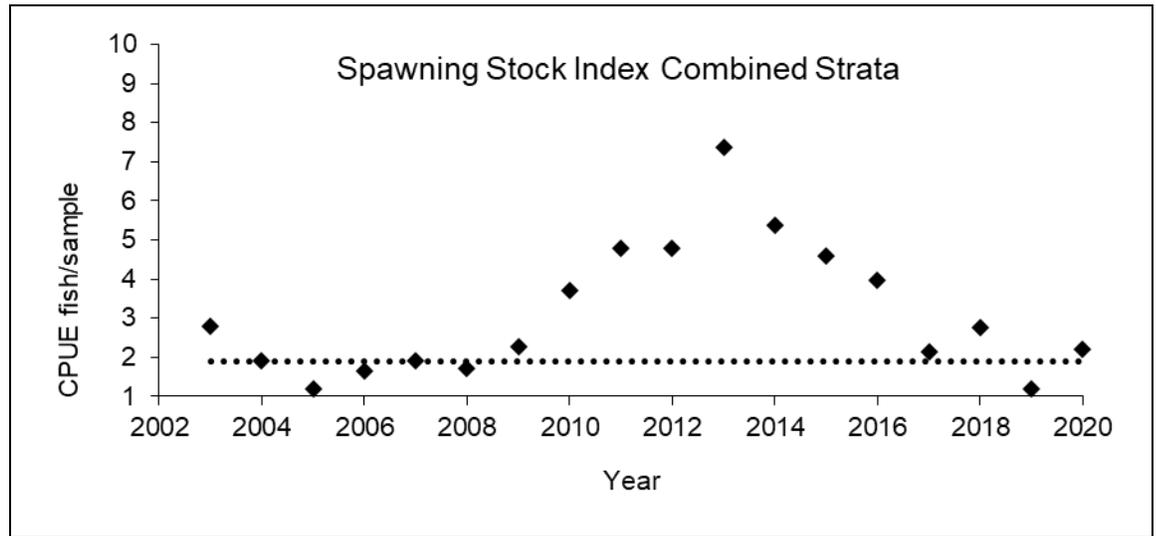


Figure 4. Spawning stock index (geometric mean) from the electrofishing survey of the St. Johns River combining both sampling strata. The 25th percentile of survey years 2003-2017 is set as the threshold in the SFMP.

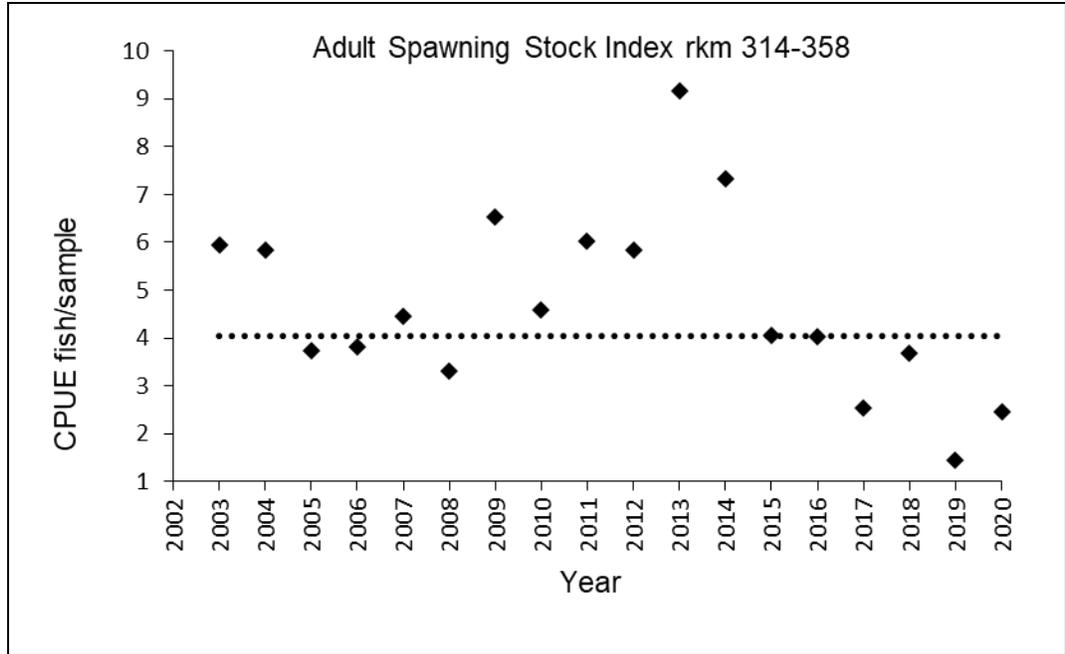


Figure 5. Spawning stock index (geometric mean) from the electrofishing survey of the St. Johns River in the upstream stratum (rkm 314 -358) in the St. Johns River. The 25th percentile of survey years 2003-2017 is set as the threshold in the SFMP.

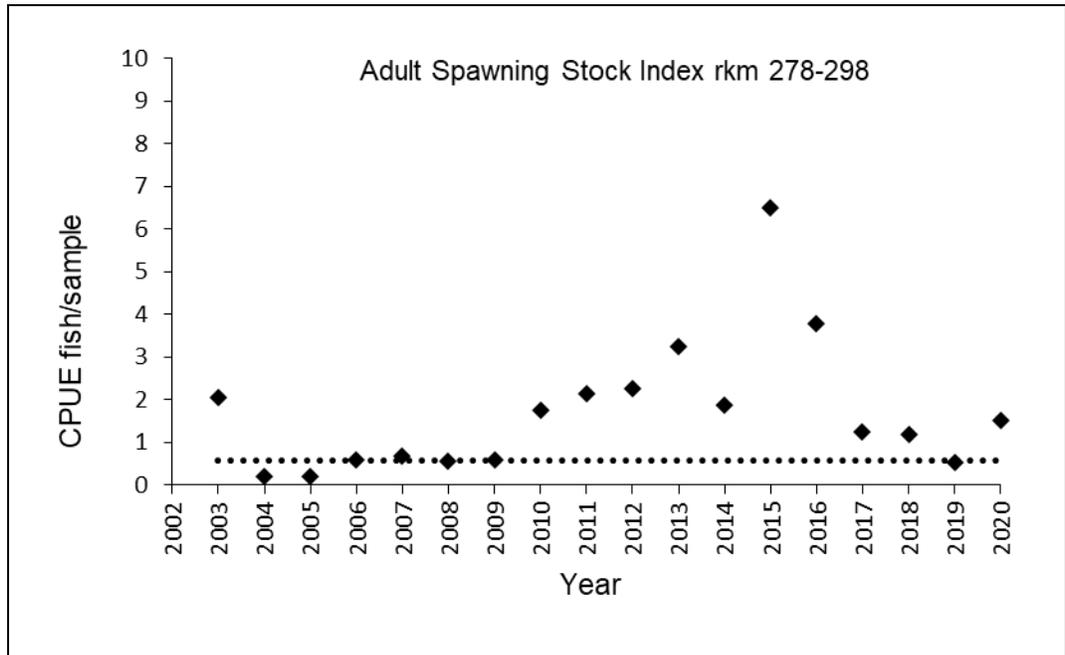


Figure 6. Spawning stock index (geometric mean) from the electrofishing survey of the St. Johns River in the downstream stratum (rkm 278-298) in the St. Johns River. The 25th percentile of survey years 2003-2017 is set as the threshold in the SFMP.



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Shad and River Herring Management Board
FROM: Shad and River Herring Technical Committee
DATE: January 5, 2020
SUBJECT: Technical Committee recommendations on improvements to Amendment 2 and 3

In October, 2017, the Board tasked the Shad and River Herring Technical Committee (TC) with developing proposed improvements to Amendments 2 and 3 with regard to the following items:

1. *Management and monitoring of rivers with low abundance and harvest of shad and river herring*
2. *Standardization of Sustainable Fishery Management Plan (SFMP) requirements: content, metrics, and management responses to triggers*
3. *Incorporation of stock assessment information into SFMPs and discussion on the timeline for renewing plans*
4. *Clarification of de minimis requirements as they pertain to SFMPs*
5. *Review of the number of years of data are required before developing a SFMP*

In 2019, the TC Task Group, a subset of the TC, was formed to address this task. The Task Group met via conference call and webinar several times during 2020 to develop draft recommendations for full TC review. Draft recommendations were presented to the TC and finalized during a webinar meeting on November 10, 2020. The final recommendations from the Technical Committee are included below, organized by topic.

Technical Committee Recommendations

1. Management and monitoring of rivers with low abundance and harvest of shad and river herring

The TC does not recommend any changes to the Fishery Management Plan (FMP) to address commercial fisheries (i.e. directed commercial harvest should always require an approved SFMP). However, the group recommends clarification on management of recreational fisheries in systems with unknown or low abundance and harvest.

The TC recommends the FMP clarify that management of recreational fisheries should be dependent on harvest and monitoring information. The following matrix summarizes the categorization recommended by the TC, which is further explained below.

		Data to support SFMP	
		Sufficient	Insufficient
Rec. Harvest	None (Species Absent)	NA	AMP
	Unknown (Species Present)	AMP / SFMP	Catch & release
	Known/ Suspected	SFMP	Catch & release

- For river systems with known populations of river herring/shad, known or suspected recreational harvest of river herring/shad, and sufficient system-specific monitoring data (FI or rec/commercial FD), the state or jurisdiction must either 1) close/implement catch and release only regulations; or 2) allow recreational harvest under a Board-approved SFMP with appropriate sustainability metrics, monitoring, and management responses. “Known” harvest is that which is recorded in official surveys or reports, whereas “suspected” harvest is identified through anecdotal or historic information in systems without official monitoring of recreational harvest. The TC would be responsible for determining whether monitoring data are sufficient or insufficient for their proposed uses.
- For systems with known populations of river herring/shad, no known or suspected harvest of river herring/shad based on recreational monitoring data, the state or jurisdiction must either 1) close/implement catch and release only regulations; 2) allow recreational harvest under a Board-approved SFMP with appropriate sustainability metrics, monitoring, and management responses; or 3) allow recreational harvest under a Board-approved Alternative Management Plan (AMP) until any recreational harvest is confirmed (using an AMP would not require a sustainability metric; recommendations for AMP requirements are provided later in this memo).
- For systems with known small populations of river herring/shad, no known or suspected harvest of river herring/shad (but without sufficient system-specific monitoring), the state or jurisdiction must either 1) close/implement catch and release only regulations; 2) allow recreational harvest under a Board-approved SFMP with appropriate sustainability metrics, monitoring, and management responses; or 3) allow recreational harvest under a Board-approved AMP until any recreational harvest is confirmed (using an AMP would not require a sustainability metric).
- For systems with no known populations of river herring/shad, and consequently no suspected harvest of river herring/shad, and no fishery-independent data for river herring/shad, the state or jurisdiction must either 1) close/implement catch and release only regulations; or 2) allow recreational harvest (or remain unregulated) under a Board-approved AMP. If river herring/shad were to become present, the state must resubmit the proposal to the TC with updated information and rationale (similar to the situation for the previous bullet).

2. Standardization of Sustainable Fishery Management Plan (SFMP) requirements: content, metrics, and management responses to triggers

The TC recommends additional language be added to the FMP to strengthen the SFMPs in several areas: A) the level of detail required in SFMPs on the management response that would be implemented should the stock fall below a defined sustainability target or threshold, B) when a state may relax restrictions implemented in response to a stock falling below the sustainability target/threshold, and C) management of interjurisdictional waterbodies. The TC did not recommend additional requirements be placed on the type of sustainability metrics that can be used in SFMPs. The group agrees that states/jurisdictions should be able to propose the most appropriate metrics for their specific systems, which would then be subject to TC evaluation and Board approval.

A. Management responses: Currently, Amendment 2 states that “If a stock is below optimum level the management plan must detail restrictions that will be enacted to allow for an increase in spawning stock abundance and juvenile recruitment” (p. 92). Amendment 3 includes an approved framework for SFMPs, which includes “discussion of management measure(s) to be taken if sustainable target is not achieved within indicated timeframe” (p. 41).

The TC recommends the following language be included in the FMP for both shad and river herring; the underlined portions are modified from the original language to provide more detail on acceptable management responses and the process for notifying the Board and implementing responses:

“States and jurisdictions must also submit a sustainable fishery management plan (SFMP) that describes how the fishery will be conducted and annually monitored in order to show that the sustainability target(s) are being achieved. The frame of reference for determining the optimum level at which to set the sustainability target(s) will vary from system to system, but should be based on an appropriate time scale. States should develop their sustainability targets within this general framework. The Technical Committee is responsible for developing a standard optimum level and timeframe basis.

If a stock is at optimum levels, then that level will need to be sustained. The SFMP must detail restrictions that will be enacted to allow for an increase in spawning stock abundance and juvenile recruitment if a stock is, or falls below, the optimum level. Such restrictions may include any of the following: fishery closures, harvest or effort restrictions, catch and release only regulations (for recreational fisheries), season changes, area closures, gear restrictions, etc. A plan may provide multiple options for restrictions that will be enacted if a stock falls below the optimum level, however, each option should allow for an increase in spawning stock abundance and juvenile recruitment.

If a stock falls below the sustainability target or threshold identified in the SFMP, the state must notify the Board in the next annual compliance report, and pursue implementation of the specified management response for the following calendar year.”

B. Relaxing management restrictions: The TC also recommends the FMP include language on when a state may relax restrictions implemented in response to a stock falling below the sustainability target/threshold. Currently the Amendments include language to this effect: “Proposals to reopen closed fisheries may be submitted as part of the annual Compliance Report, and will be subject to review by the Plan Development Team, Technical Committee and Management Board.” The TC recommends the following addition:

“If a state has implemented a management restriction in response to the stock falling below the sustainability target(s), the management restriction must stay in place until the sustainability target(s) have been met for at least 5 consecutive years.”

C. Interjurisdictional management guidance: The TC also recommends that the FMP include additional guidance on management of waterbodies shared by one or more jurisdictions. The current Amendment 2 language states “Targets for river systems managed by more than one state/jurisdiction should be cooperatively developed” (p. 92). Amendment 3 states “For states and jurisdictions which share a river or estuary, agencies should include those monitoring programs conducted or planned by the agencies, applicable agency regulations, and habitat and habitat threats applicable to the state or jurisdiction’s waters. In shared water bodies where there is a management cooperative, the cooperative or a member state or jurisdiction can be appointed to write the Implementation Plan” (p. 40).

The TC suggests the following change for both species:

“Targets for river systems managed by more than one state/jurisdiction should be cooperatively developed, such that shared systems are not managed by each jurisdiction using unique targets and/or monitoring data. One shared management plan may be submitted cooperatively by multiple jurisdictions sharing one system, including details on management measures and monitoring for/by each jurisdiction. Alternatively, one jurisdiction may be appointed to submit the plan for a shared

system; for example, if one state/jurisdiction is the primary source of fishery-dependent and/or fishery-independent data for a shared system, that state may include the system in their state management plan, and include information for the other jurisdictions which share waterbodies. When possible, fisheries conducted in shared water bodies by harvesters permitted by different jurisdictions should be subject to consistent management measures.”

3. Incorporation of stock assessment information into SFMPs and discussion on the timeline for renewing plans

To address this item, the Task Group recommended that the TC compile information on all current monitoring programs by species and system, and then develop recommendations for improvements to data for use in SFMPs and assessments. Some concern has been expressed among TC members that for many systems there is inconsistency between the information used to assess stock status through the stock assessment and that used to develop sustainability metrics for SFMPs. This issue is also being addressed as part of the August 2020 Board task to identify paths forward to improve shad stocks. The TC will continue to review required and ongoing monitoring efforts to improve data available for SFMPs and stock assessments.

The TC does not recommend a change to the five year timeline for renewing SFMPs and AMPs.

4. Clarification of de minimis requirements as they pertain to SFMPs

The TC does not recommend any changes to the current *de minimis* criteria and exemptions for states with *de minimis* status. Currently, under Amendments 2 and 3 states that report commercial landings of river herring or American shad, respectively, that are less than 1% of the coastwide commercial total are exempted from sub-sampling commercial and recreational catch for biological data.

5. Review of the number of years of data are required before developing a SFMP

The Task Group discussed how many years of data are appropriate in order to use a data time series to establish a sustainability metric, and made draft recommendations based on the biology of the species and statistical value. The following recommendations were fully supported by the TC.

- For shad, a minimum of 10 years of data should be required to establish a primary sustainability metric in an SFMP or AMP. The TC may have some discretion in evaluating state proposals that do not have 10 consecutive years of data.
- For river herring, the standard for acceptable time-series length for data being used to establish an SFMP metric should be 10 years. If additional information is provided to justify the use of a shorter time-series for establishing an SFMP metric, the TC may accept a time series trend of 7-9 years, with consideration of exploitation rate, stock size, or other relevant factors.

Additional Draft Recommendations

Beyond the five areas identified in the original Board task, the TC recommends some additional improvements to the FMP, summarized below:

- The TC recommends that additional language be included in the FMP to provide clear guidance on the use of AMPs. The TC recommends that AMPs must include the following components:
 - A statement of rationale or justification explaining why an SFMP cannot be used (e.g. data availability)

- Justification that the proposed management program will be conservationally equivalent to catch and release only regulations (e.g. there is no suspected harvest in the system(s) due to very low abundance based on fishery independent data or habitat limitations, creel survey data has not shown any harvest of species, etc.)
 - Explanation of how the state will determine if or when an AMP is no longer appropriate, including description of the data sources that will be monitored, and the trigger that will be used based on those data sources (e.g. 3 years of recorded harvest, or a defined level of abundance from surveys)
 - Description of the management response that will be implemented if this trigger is met. (E.g. If harvest is documented through a creel survey for 3 consecutive years, catch and release only regulations will be implemented statewide or for specified systems).
 - If a management trigger identified in the AMP is met, the state must notify the Board in the next annual compliance report, and pursue implementation of the specified management response for the following calendar year.
- In previous TC and Advisory Panel meetings, the committees have considered the idea of allowing limited recreational harvest in systems without an SFMP/AMP using a low statewide bag limit. The TC does not recommend allowing any recreational harvest to occur on systems that are not managed through an approved SFMP or AMP. The rationale is that unmonitored systems could experience unchecked recreational fishing pressure which could be detrimental to small stocks. The recommendation is that if a state wishes to apply a statewide recreational bag limit, the state must have an approved SFMP or AMP, and all unmonitored systems must be subject to management responses (e.g. closures, harvest restrictions) that are triggered by available sustainability metrics. For example, if a state has a statewide recreational bag limit, the SFMP should require the closure of recreational harvest (e.g. catch and release only regulations) for all unmonitored systems if one monitored system falls below the sustainability target.
 - The TC recommends that AMPs allowing statewide recreational bag limits or no recreational regulations must include a trigger (e.g. observed recreational harvest, or increase in fishery independent abundance index) to implement catch and release only regulations or propose an SFMP (if sufficient data is available).

Maine Department of Marine Resources

American Shad Habitat Plan

Prepared by:

Maine Department of Marine Resources
Sea-Run Fisheries Division

With contributions by:

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September 1, 2020

Submitted to the Atlantic States Marine Fisheries Commission as a requirement of the
Amendment 3 to the Interstate Management Plan for Shad and River Herring

Introduction

The 2020 Atlantic States Marine Fisheries Commission’s American Shad Stock Assessment and Peer Review Report provides an extensive review of available literature and discussion on the topic of fish passage (ASMFC 2020). Specifically, it highlights the issues with lack of evaluation and performance from decades-old approaches, facilities designs/operations that are not effective, and therefore cannot reasonably be expected to achieve management and restoration goals without significant changes. The Assessment Report also provides an important quantitative modeling approach examining shad habitat and passage barriers, and the need to address status quo fish passage performance. The impacts of these barriers and status quo passage are described and also modeled as effects on spawner population size under three scenarios, 1) no barriers, 2) first barrier with no passage, and 3) realistic fish passage performance measures applied to barriers (e.g., upstream passage efficiency of 50%).

The Assessment Report used standardized data and modelling approaches that quantified the impacts of barriers and fish passage as significant in all three management areas examined based on shad life history and habitat (New England, Mid-Atlantic, and South Atlantic). The assessment determined that overall, dams completely or partly block nearly 40% of the total habitat once used by American Shad. The model results of the “no barriers” scenario yielded an estimated spawner production potential 1.7 times greater than that yielded by the scenario assuming no passage at the first barrier: 72.8 million versus 42.8 million fish. The results of the third model scenario, which applies “realistic” (i.e., current) fish passage efficiencies, resulted in a gain of less than 3 million fish. Conclusions include “losses in (spawner production) potential are significant in each state and region.” The Assessment Report provides a strong justification for the need and benefits of requiring improved fish passage performance measures. Additionally, meeting such improved passage performance standards is now an achievable goal given the current state of knowledge on fish behavior, swimming performance, and fish passage engineering expertise.

This report specifically provides information for the major known American shad spawning and young-of-year rivers: the Saco, Androscoggin, Kennebec (and Sebasticook), and Penobscot rivers. The process of providing upstream and downstream passage for all anadromous fish is an ongoing effort by the State of Maine and its federal, state, and private partners. There may be ongoing, or recently completed restoration efforts not covered in this document while the effectiveness of these projects is assessed. Information about general threats, data availability, current work and recommended actions are provided in the State-Wide Information section.

State-Wide Information

Available Habitat

State-wide, there are twenty-three identified American shad rivers with over 2545 river kilometers of potential habitat. Currently only 1,611 river kilometers are known to be open to American shad passage, while over 810 river kilometers of historical habitat are currently inaccessible (Figure 1, Table 1). Of the habitat that is accessible, a large portion on many rivers is above dams with fishways that may provide only limited accessibility. It is assumed that the

mapped habitat represents both adult and juvenile use. American shad are documented as regular catches in recreational fishing reports from the Sheepscot, Mousam, Presumpscot, Saco and Kennebec rivers and Scarborough Marsh, but there are few reports from other rivers. The population sizes are unknown.

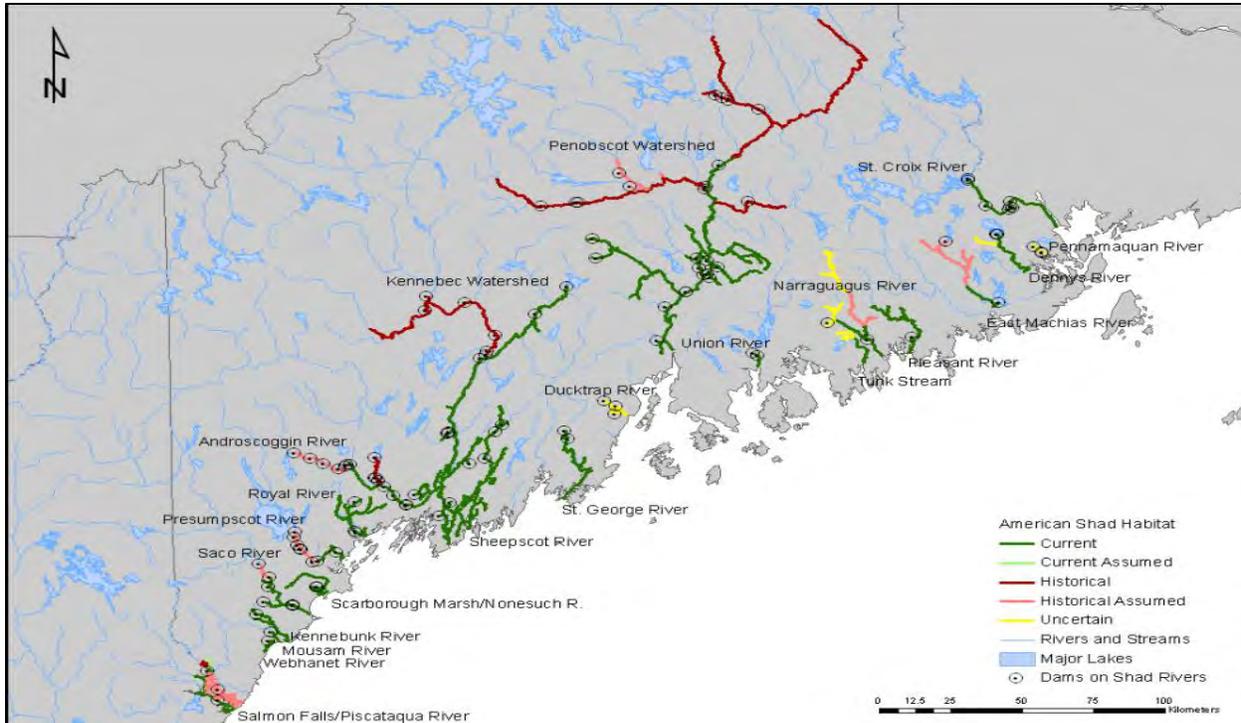


Figure 1. American shad habitat in Maine waters as identified by a USFWS mapping effort (USFWS 1983). Dams and impoundments on shad rivers are also shown.

Major Threats

Barriers to migration are the primary impediments to American shad habitat and successful spawning within Maine state waters. Out of 24 shad rivers in Maine, 18 have a mainstem dam that likely limits shad passage upstream. Of these, five have no capacity for fish passage (Table 2).

Even when fish passage is installed at these dams, the use of habitat upstream of dams is thought to be much lower than the use of areas below the dam. In 2011, video monitoring below Brunswick Fishway on the Androscoggin River documented over 16,000 American shad below the dam, while no shad were passed at the top of vertical slot fishway (J. Lichter, Bowdoin College, pers. comm). Fish passage efficiency for American shad has not been documented at the other sites in Maine, however other studies have described the potential for shad passage.

Table 1. Amount of American shad habitat (river kilometers) in Maine waters (USFWS 1983). Rivers are listed in order of descending habitat kilometers.

River/Watershed	Current (though may be limited)	Current Assumed	Historical	Historical Assumed	Uncertain	Total
Penobscot Watershed	399.6		354.0	32.7		786.3
Kennebec Watershed	300.4		107.2			407.6
Salmon Falls/Piscataqua River	59.8	8.1	8.9	108.1		184.9
Sheepscoot River	178.8					178.8
Narraguagus River	38.9			35.6	60.4	134.9
Royal River	106.2					106.2
Androscoggin River	48.3		17.4	34.8		100.5
Saco River	49.1			50.6		99.7
East Machias River	18.8			67.0		85.7
Pleasant River	72.1					72.1
Scarborough Marsh/Nonesuch R.	70.4					70.4
St. George River	65.5					65.5
St. Croix River	61.8					61.8
Kennebunk River	47.0					47.0
Dennys River	34.8				10.7	45.5
Presumpscot River	22.0			22.2		44.2
Tunk Stream	20.2				16.8	37.1
Ducktrap River					22.8	22.8
Webhanet River	8.9					8.9
Union River	7.9					7.9
Pennamaquan River					7.6	7.6
Mousam River	6.3					6.3
Little River	5.5					5.5
Grand Total	1622.3	8.1	487.5	351.0	118.2	2587.2

The majority of the dams with fish passage on shad rivers in Maine have Denil fishways. Denil fishways seem to have high potential for passage (Slatick and Basham 1985, Haro *et al.* 1999), however, the ability of shad to locate the fishway opening in a large mainstem dam may be low, especially when there is a large spillway. Thus, the potential for shad passage above a mainstem dam with a Denil fishway is generally moderate.

Other mainstem dams in Maine have fish lifts. The potential for these locations to pass American shad is thought to be low to moderate. As discussed above, the ability of shad to locate the fish lift entrance is likely hindered by attraction flows from large spillways. Further, in all Maine dams with fish lifts there is evidence that shad remain in holding areas above the fish lift but do not exit the headpond, as evidenced by a large proportion of “passed” shad found only when the facilities are periodically de-watered, and only few shad passed during normal operations (Maine DMR ASMFC Compliance 2011 Report).

Table 2. The first mainstem dams on American shad rivers in Maine with fish passage and dam ownership information listed.

River/Watershed	Distance to first mainstem dam (km)	First Mainstem Dam Name	Fish Passage Type	Shad Passage Potential	Dam Ownership	FERC License	FERC License Renewal
Salmon Falls/Piscataqua River	26.8	South Berwick Dam	Denil	Moderate	Consolidated Hydro New Hampshire, Inc	Yes	11/30/2037
Salmon Falls/Piscataqua River	26.6	Great Works Pond Dam	None	None	Great Works Hyrdo Co.	No	
Webhanet River	None						
Little River	3.3	Skinner's Mill Dam	None	None	Not listed	No	
Mousam River	6.8	Kessler Dam	None	None	Kennebunk Light and Power District	Yes (3 dams)	3/31/22
Kennebunk River	27.9	Days Mill	None	None	Private	No	
Saco River	9.3	Cataract Project	Fish Lift, Denil, 2 fish locks	Low to Moderate	Brookfield Renewable Energy	Yes (4 dams)	11/30/29
Scarborough Marsh/Nonesuch R.	None						
Presumpscot River	12.6	Cumberland Mills	Denil Fishway	Moderate	S. D. Warren	No	
Royal River	4.9	Bridge Street Dam	Denil Fishway	Low	Town of Falmouth	No	
Androscoggin River	48.2	Brunswick Project	Vertical slot	Low (Documented)	Brookfield Renewable Energy	Yes	2/28/29
Kennebec River	140.8	Lockwood Project	Fish Lift	Low	Brookfield Renewable Energy	Yes	10/31/36
Sebasticook River	173.6	Benton Falls	Fish Lift	Moderate	Essex Hydro Associates	Yes	2/28/34
Sheepscot River	44.0	Head Tide Dam	Slots	Moderate	Town of Alna	No	
St. George River	48.3	Sennebec Pond Dam	Rock Ramp	High	Sennebec Lake Assoc.	No	
Ducktrap River	17.9	Dickey Mill Dam	None	None	Not listed	No	
Penobscot Watershed	68.5	Milford Dam	Fish Lift	Low to Moderate	Bangor Hydro Electric Co.	Yes	4/1/38
Union River	7.3	Ellsworth Dam	Denil, Trap and Truck	Not Passed Upstream	Black Bear Hydro	Yes	12/31/18 (consulting)
Tunk Stream	None						
Narraguagus River	10.6	Cherryfield Dam	Denil Fishway	Moderate	Town of Cherryfield	No	
Pleasant River	None						
East Machias River	None						
Dennys River	None						
Pennamaquan River	2.9	Pembroke Cottage Dam	Denil Fishway	Moderate	Private	No	
St. Croix River	30.8	Milktown Power Station Dam	Denil Fishway	Moderate	New Brunswick Electric Co.	No	

Water quality. While poor water quality due to point source pollution from tanneries, paper mill companies, and other manufacturing may have negatively impacted adult spawners, developing embryos, and young-of-year in the early to mid-twentieth century, improvements were made as a result of the Clean Water Act after 1970. As a result, it is not thought that poor water quality remains a threat in most known spawning/rearing locations. Basic water quality parameters (temperature, dissolved oxygen, turbidity, pH) are well above the tolerances for American shad, when they are taken. It should be noted that only temperature is taken on a daily basis at most fishways in Maine whether DMR or power-company operated. Moreover, there are no current studies in Maine to determine whether existing levels of toxic contaminants (heavy metals, PCBs) may be negatively affecting shad populations.

The Maine Department of Environmental Protection (DEP) administers regular water quality testing of Maine's waters. The State has four classes for freshwater rivers, three classes for

marine and estuarine waters, and one class for lakes and ponds. A close comparison of the standards will show that there are few differences between the uses or the qualities of the various classes. All classifications attain the minimum fishable-swimmable standards established in the federal Clean Water Act, and most support the same set of designated uses with some modest variations in their description. More information about the classification schema can be found at: <http://www.maine.gov/dep/water/monitoring/classification/>

The Maine DEP determines the water quality classification of freshwater areas through the Biological Monitoring Program. This program assesses the health of rivers, streams, and wetlands by evaluating the composition of resident aquatic benthic macroinvertebrate and algal communities. The DEP develops standards for each river, stream and wetland using these methods, testing important sites on a rotating basis. Smaller waterways may be tested infrequently. More information can be found at: <http://www.maine.gov/dep/water/monitoring/biomonitoring/index.html>

Marine water quality is assessed by multiple organizations and the information compiled by the Maine DEP for Clean Water Act reports that are due every other year to the EPA. The DEP utilizes data for assessments in marine waters from its own environmental and toxics monitoring programs including the Surface Water Ambient Toxics and the Gulf of Maine Council on the Marine Environment's Gulfwatch project, and to a large extent from a variety of governmental agencies, academic institutions, non-profit organizations and municipalities, such as the Maine Healthy Beaches program, Maine Department of Marine Resources, New Hampshire Department of Environmental Services, University of Maine, BioDiversity Research Institute, Casco Bay Estuary Partnership, Kennebec Estuary Land Trust, Marine Environmental Research Institute, Mount Desert Island Biological Laboratory, Town of Rockport Conservation Commission, and the Wells National Estuarine Research Reserve. Additionally, a number of volunteer monitoring groups monitor Maine's estuarine and coastal waters. The DEP currently accepts data from organizations with approved Quality Assurance Project Plans (QAPPs) whose monitoring programs and analytical labs enable collection and processing of quality data, and from selected organization with DEP-approved sampling plans. Biannual reports can be found at: <http://www.maine.gov/dep/water/monitoring/305b/index.htm>

Channelization and dredging. occur in Maine waters, though are not thought to be a significant threat to American shad habitat. Channelization and dredging typically occur beyond the mouths of rivers in association with beach restoration (southern Maine) or shipping lanes (Kennebec River, Bath Iron Works). Before any channelization or dredging project commences, it must first be reviewed by all relevant agencies (including Maine DMR, Maine DEP, USFWS, and NOAA) which provide comments concerning species interaction.

Invasive species. Concerning the threat from competition and predation, a growing number of invasive white catfish, carp (*Cyprinus carpio*), and Northern pike have been documented in Maine. These species are found in American shad spawning areas, but the impact on shad populations has not been documented.

Statewide Available Data

In 1982, the US Fish and Wildlife Service (USFWS) compiled habitat information for many diadromous species to create a snapshot of the current and historic distribution in Maine that is available from the USFWS Northeast Regional Office's data website (USFWS 2013). The purpose of this project was to identify, based on the best available information, the current and historic geographic distribution of 12 diadromous (sea-run) fish species in Maine (alewife, American eel, American shad, Atlantic salmon, Atlantic sturgeon, Atlantic tomcod, blueback herring, rainbow smelt, sea lamprey, sea run brook trout, shortnose sturgeon, striped bass).

To begin this process, available digital data depicting current and historic extent of each species was presented on a series of paper maps. These maps were distributed throughout the state and reviewed by fisheries biologists, including representatives from government agencies, non-government organizations and private individuals. Reviewers edited the maps on the basis of their personal knowledge, institutional knowledge and review of existing data and documents, both published and unpublished. These maps were then collated and coded in a networked hydrography dataset (the most detailed available National Hydrography Dataset[NHD]) resulting in one GIS layer (a line Feature Class) for each fish species. Each Feature Class shows the user the current and historic extent of the species and the sources used to delineate that extent. The Feature Class can be used alone but is most useful when joined back to the NHD as an event table, thus making additional data available (e.g. feature names, flow, etc.). The 'AmericanShad' feature class specifically identifies the current and historic distribution of American shad in Maine (USFWS 1982).

Agencies with Regulatory Authority

Maine DMR, USFWS, NOAA, Maine DEP, FERC

Other Organizations

Dam ownership for first mainstem dams is listed in Table 2.

Current Action and Progress

During all Federal Energy Regulatory Commission (FERC) relicensing processes, the Maine DMR in collaboration with federal agencies advocates for fish passage that will allow the best accommodation for all diadromous fish passage, including American shad passage. In addition to FERC processes, the Maine DMR also provides comments on most fish passage projects in the state – where there is a project on identified shad river, we provide comments and work with public and private landowners to install fish passage, or upgrade existing passage, to allow for all maximum passage potential for all diadromous species, including American shad.

Regarding monitoring projects, other than three on-going activities (fishway monitoring on the major rivers, juvenile beach seine and in-river trawl surveys, recreational fishing surveys), there are few efforts focused on American shad in Maine waters. There are a few river-specific projects that are discussed in the sections below, including video monitoring at Brunswick fishway. There are, however, no efforts to ground-truth the assumed current spawning habitat, and currently no fishway efficiency studies that focus on shad passage.

Larval stocking. American shad fry were raised at the Waldoboro hatchery from 1992 to 2008 using eggs collected from adults from the Kennebec, Connecticut, Androscoggin, Merrimack, Saco, and Sebasticook Rivers. The program ended in 2008 due to a lack of funding. Larval American shad that were reared in the hatchery were 'marked' by immersion in an oxytetracycline (OTC) bath before being released. Receiving locations included multiple sites on the Androscoggin, Kennebec, and Sebasticook Rivers (both below and above dams), as well as at the presumed spawning locations on the Medomak River and on the Saco River in tidal water. The hatchery closed in 2009 with no plans to reopen the hatchery due to funding and current management of American shad along the East Coast.

Adult American shad otoliths are collected from mortalities at fish passage facilities, from juveniles collected during the beach seine surveys, and from some anglers who voluntarily submitted samples. The Maine DMR inshore trawl survey also began collecting otoliths from a sub-sample of American shad in fall 2012. Difficulty with fine tuning OTC marking processes due to hard water, excessive mortality while applying more than one mark and reading OTC presence on recovered otoliths complicated assessing returns from the project. While we have not directly measured the success of the stocking program, juvenile abundance in the Kennebec/Androscoggin complex does seem to have increased concurrent to larval stocking

Juvenile Abundance Surveys. In 1979, MDMR established the Juvenile Alosine Survey for the Kennebec/Androscoggin estuary to monitor the abundance of juvenile alosines at 14 permanent sampling sites. Four sites are on the upper Kennebec River, three on the Androscoggin River, four on Merrymeeting Bay, one each on the Cathance, Abagadasset, and Eastern rivers. These sites are in the tidal freshwater portion of the estuary. Since 1994, Maine DMR added six additional sites in the lower salinity-stratified portion of the Kennebec River.

Over the entire sampling period (1979-2019), the overall highest average catch per unit effort (CPUE) for juvenile American shad was found in the Abagadasset River (9.82 shad per haul), followed by the upper Kennebec River (8.70). Merrymeeting Bay (5.92), the Cathance (3.83), Eastern (3.36), and the lower Kennebec rivers (3.22) all have lower but consistent CPUE values. The Androscoggin River has consistently low catches of shad or years where no shad are caught (0.44 shad per haul; Table 3). The strength of these data in identifying successful spawning areas is limited because sampling is performed after the spawning event, and juvenile shad may have dispersed from their natal location by passive larval drift. These data may provide some insight into juvenile shad habitat.

Recommended Action(s)

- Remove mainstem hydropower dams or install effective fish passage
- Ground-truth assumed current spawning habitat state-wide
- Conduct population estimates for Saco, Androscoggin, Kennebec/Sebasticook, and Penobscot rivers
- Map young-of-year habitat based on existing beach seine and in-river trawl surveys in the Kennebec River/Merrymeeting Bay estuary complex and Penobscot River
- Conduct fishway efficiency studies that focus on shad passage at existing fishways
- Determine locations beyond those regularly monitored where American shad passage may be limited by human-made obstructions

Table 3. American shad catch per unit effort in eight survey locations in the Kennebec River/ Merrymeeting Bay estuary complex. Survey design was altered in 1994 when 6 stations were added to the survey sites.

Juvenile American Shad Catch per Unit Effort by River Segment								
Year	Upper Kennebec River	Merrymeeting Bay	Androscoggin River	Cathance River	Abagadasset River	Eastern River	Mid Kennebec River	Lower Kennebec River
1979	0.16	0.00	0.00	0.00		0.00		0.00
1980	0.00	0.36	0.29	0.00		0.00		0.00
1981	1.08	0.85	0.29	0.50		0.00	0.17	0.00
1982	0.00	0.33	0.17	0.00		0.00	0.63	0.00
1983	0.15	0.20	2.18	3.00		0.00		
1984	0.90	0.46	0.00	2.00		0.67		
1985	0.69	1.53	0.40	6.50		7.00		
1986	0.10	0.15	0.08	1.00		0.50		
1987	0.15	8.05	0.17	1.25	0.50	0.00		
1988	0.11	1.36	0.00	0.00	0.33	0.51		
1989	1.25	0.29	1.29	0.48	0.00	0.00		
1990	3.50	2.46	0.83	6.83	0.33	4.20		
1991	1.21	0.00	0.00	0.67	1.67	1.17		
1992	0.10	0.67	0.67	3.67	0.00	0.00		
1993	0.00	0.29	3.63	0.00	0.00	0.00		
1994	0.00	0.35	1.00	0.00	0.17	0.50		
1995	0.21	0.39	1.89	0.17	0.60	0.33		
1996	4.15	0.25	0.00	0.20	0.33	0.50		
1997	0.00	0.88	0.80	0.00	0.40	0.00		
1998	0.00	1.67	0.00	0.00	0.00	0.00		
1999	0.00	20.46	0.00	42.67	33.00	0.00		
2000	15.14	0.33	0.14	0.33	0.33	1.33		1.58
2001	0.57	3.14	2.57	0.43	0.00	0.20		0.05
2002	1.96	2.18	0.18	1.86	22.86	2.43		0.19
2003	74.13	3.63	0.00	2.17	0.67	5.33		0.42
2004	48.21	6.67	0.00	0.67	3.00	0.50		0.39
2005	24.96	3.42	0.06	2.83	10.00	2.40		3.72
2006	38.79	25.30	0.00	0.67	16.50	8.33		5.44
2007	33.38	24.13	0.00	0.67	19.00	16.83		1.40
2008	3.95	12.88	0.00	3.00	34.17	3.67		1.38
2009	4.29	16.38	0.20	4.17	31.67	5.17		1.27
2010	45.63	8.25	0.39	11.00	15.33	7.17		1.03
2011	0.63	11.25	0.00	25.33	94.17	9.17		1.73
2012	1.30	11.17	0.06	8.00	13.00	19.67		16.86
2013	5.75	27.83	0.00	3.17	17.83	3.17		32.72
2014	11.08	14.83	0.00	3.17	54.00	3.50		8.69
2015	9.67	3.59	0.53	1.17	21.00	3.83		0.56
2016	4.25	3.13	0.00	7.17	0.83	5.83		0.67
2017	12.0	13.55	0.00	5.20	3.40	8.16		1.43
2018	1.79	5.21	0.28	0.83	1.33	9.0		0.22
2019	5.33	4.79	0.00	6.33	6.19	6.83		0.69
Average	8.70	5.92	0.44	3.83	9.82	3.36	0.40	3.22

Saco River

Amount of Habitat

There are currently 49.1 river kilometers of accessible shad habitat in the Saco River (though accessibility to habitat above dams with fish passage is limited), with another 50.6 river kilometers of assumed historical habitat (Table 1). Spawning and juvenile habitat have not been identified. Although no studies have documented shad spawning areas in the Saco River, it is thought that the majority of spawning occurs below the Cataract Project mainstem dams. Habitat above this area is mapped as accessible habitat because shad passage is possible at the Skelton Dam fish lift and interim trap and truck operations to move shad past the project's fish locks (see discussion below). The river portion listed as inaccessible (historical assumed) is above the Bar Mills, which currently has no fish passage facility (Figure 3).

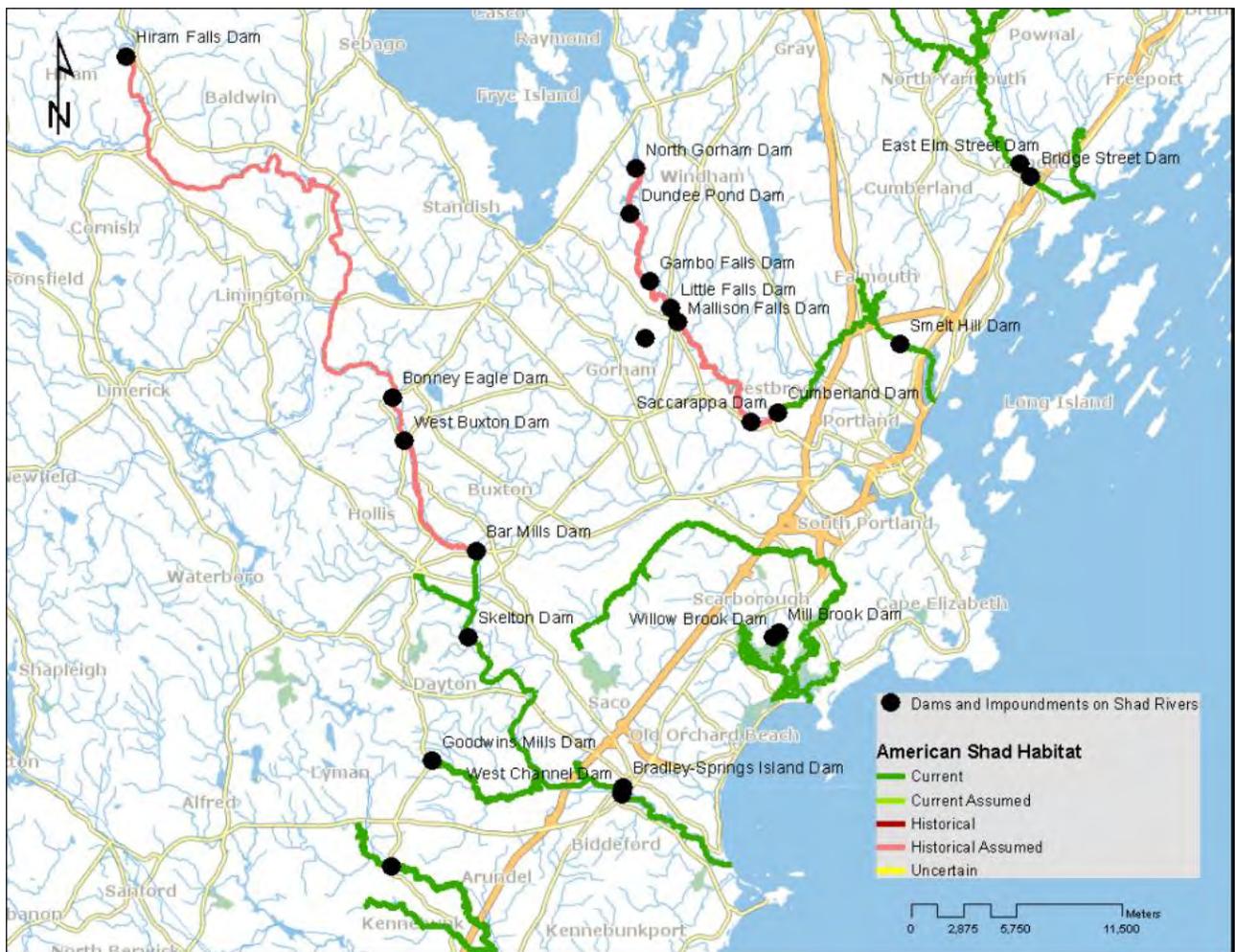


Figure 3. Saco River American shad habitat. Historical habitat is above dams with no fish passage. The Scarborough Marsh and Nonesuch River shad habitat is also shown in full in the middle-right of the figure.

Available Data

- Adult American shad counts, Brookfield Renewable Energy
- Video monitoring of shad behavior downstream on the Cataract Project, Brookfield Renewable Energy
- Maine DEP water quality reports
- USFWS. 1983. American Shad Habitat in the Gulf of Maine.
<http://www.fws.gov/r5gomp/gom/habitatstudy/metadata/shadhab83.htm>
- USFWS. 2013. GIS Data at the Gulf of Maine Coastal Program.
<http://www.fws.gov/r5gomp/gisindex.htm>

Threat(s)

- Barriers to migration

The majority of shad passage on the Saco River occurs at the East Channel fish lift of the Cataract Project. The project is licensed by the Federal Energy Regulatory Commission (FERC No. 2528) and is owned by Brookfield Renewable Energy (formerly NextEra, formerly Florida Power and Light). The project includes the Cataract (East Channel) Dam and East Channel fish lift and an integral intake powerhouse containing a single turbine generator on the northeastern side of Factory Island in the City of Saco; and the West Channel dam and Denil fishway in the cities of Saco and Biddeford (Figure 3).

The impoundment formed by these dams extends upriver in the cities of Biddeford and Saco about 0.3 mile to another set of dams at Spring Island referred to as Bradbury and Spring Island dams. The impoundment formed by these dams extends upriver approximately 9.3 miles through the cities of Biddeford and Saco and the towns of Dayton and Buxton to Brookfield Renewable Energy's Skelton Project (Figure 3). A 90-foot high fish lift was constructed at the Skelton Project and first became operational in the fall of 2001.

Agencies with Regulatory Authority

Maine DMR, USFWS, NOAA, Maine DEP, Brookfield Renewable Energy (formerly NextEra, formerly Florida Power and Light)

Other Organizations

Saco River Salmon Club

Current Action and Progress

Monitoring and Passage. In 2019, the Cataract fishways were operated by personnel from Brookfield Hydro Operations division. These fishways were built to pass anadromous target species (Atlantic salmon, American shad, and river herring) as part of resource agency plans to restore these species to the Saco River, and have operated for 26 years. Although fishway construction was completed in the spring of 1993, the fishways were not completely operational until June 2, 1993 (East Channel) and June 25, 1993 (West Channel).

An underwater camera connected to a television monitor and VCR was first used in 1995 to gather information on fish behavior within the lower flume of the East Channel fish lift. The camera documented that shad exhibit a fallback behavior in and around the East Channel lower

flume V gate crowder. On occasion, shad would swim upstream through the V gate crowder into the hopper area, then within minutes (and sometimes seconds) swim back downstream through the V gates and out of the lower flume into the tailrace. Also, on many occasions, shad were reluctant to pass through the V gate crowder in the fishing position (see 1995 Cataract fishway study report Sections 3 and 4 for detailed information on camera study and results). Since 1996, the underwater video camera, combined with keeping the V gate crowder wide open, was a very important technique that increased East Channel fishway efficiency. Fishway personnel observed that by keeping the V gate crowder open, shad moved readily into the trapping area. Utilizing the underwater camera, fishway personnel could observe shad as they passed through the wide open V gate crowder, then close the crowder and trap before the shad had a chance to fall back. This technique will continue in 2020.

A 2007 settlement agreement provides a schedule for fish passage at the remaining dams owned by FPL Energy (Table 4), a schedule for effectiveness testing, and a schedule for improvements at the Spring Island or Bradbury dam so American shad can pass.

Table 4. Schedule for fish passage implementation at Saco River dams.

Dam Name	Upstream anadromous passage
Cataract - East Channel, West Channel	fish lift, Denil
Cataract - Springs Island, Bradbury	fishlocks
Skelton	fish lift
Bar Mills	5/1/2016
West Buxton	5/1/2019
Bonny Eagle	5/1/2022
Hiram	5/1/2025

In 2019, Brookfield Energy biologists counted a total of 1,139 American shad (1,121 passing the East Channel Dam, and 18 passing the West Channel Dam, Figure 4). Of the 1,121 American shad passed through the Cataract East Channel fishway, a total of 64 shad mortalities were noted. This represents a total fishway mortality of 5.6 %, which is slightly higher compared to past years: 1995 (3.5%), 1996 (4.8%), 1997 (2.7%), 1998 (3.5%), 1999 (2.6%), 2000 (2.7%), 2001 (2.4%), 2002 (2.8%), 2003 (2.5%), 2004 (3.0%), 2005 (2.6%), 2006 (2.8%), 2007 (3.0%), 2008 (2.9%), 2009 (4.8%), 2010(1.9%), 2011 (2.1%), 2012 (1.2%), 2013(1.3%) , 2014 (2.2%), 2015(1.8%), (3.2%), 2017 (2.1%), 2018 (1.3) and 2019 (5.6%). The majority of the American shad captured at the East Channel fish lift were transported to the Diamond Riverside Boat Ramp stocking location (approximately half mile upstream of the fishway), while the remaining shad were allowed to freely swim through the fishway into the Cataract impoundment.

At the Skelton Project during the 2012 season, 47 shad were lifted. It is assumed that many of the American shad that were not lifted at the Skelton fishway spawned below the project, as post-spawned American shad and juvenile American shad are routinely observed at the downstream Cataract Project. Also, the 9.3 miles between the Skelton Project and the Cataract Project provides potential spawning habitat for approximately 25,000 adult American shad.

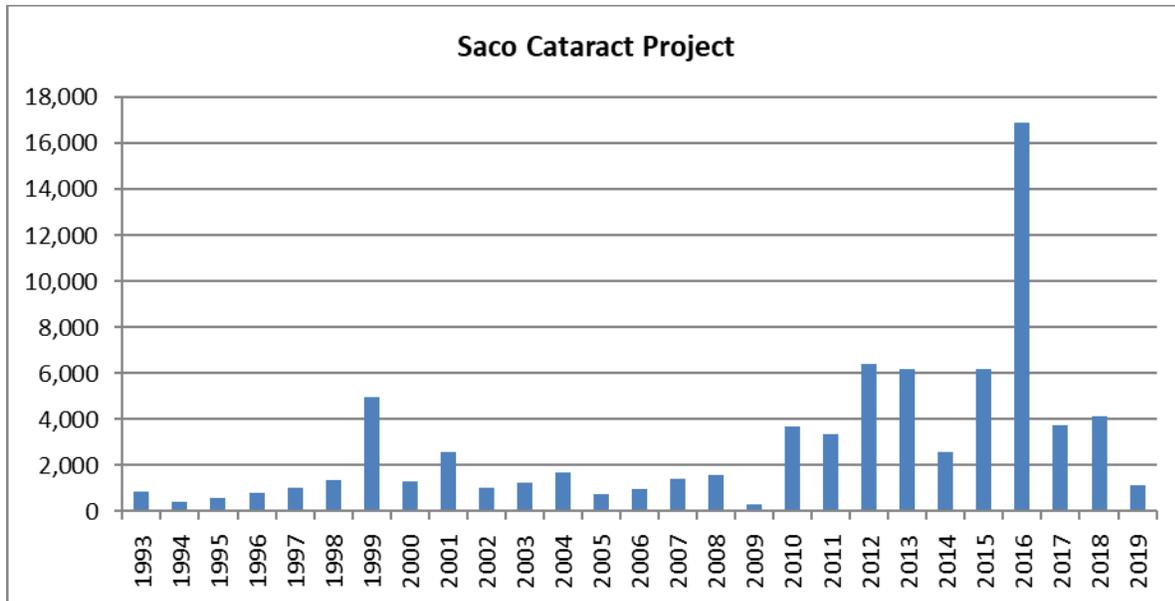


Figure 4. American shad passage at the Cataract Project from 1993 to 2019.

Goals and Recommended Actions

- Continue DMR consultations on proposed operational change to improve shad passage at fish locks
- Ground-truth spawning habitat both below Cataract projects and identify additional spawning habitat upstream
- Estimate mortality for adult shad passing the Cataract Project
- Conduct downstream efficiency and mortality studies
- In addition to video monitoring at the Cataract Project, document upstream efficiency at this location and at the Skelton Project
- Monitor water chemistry (DO, turbidity, pH, temperature, conductivity) during spawning season

The timeline and associated costs of these recommended actions has not been determined.

Androscoggin River

Amount of Habitat

The Androscoggin River contains 100.5 river kilometers of potential American shad habitat. Of this, 48.3 river kilometers are accessible (though accessibility to habitat above dams with fish passage is limited), while the remaining habitat is inaccessible due to obstructed fish passage (Figure 5, Table 1). While passage above the Brunswick Dam is considered possible because the vertical-slot fishway allows some shad passage, actual passage by American shad has been documented to be very low (Figure 6), and the majority of habitat use has been documented in the small portion of river below the dam.

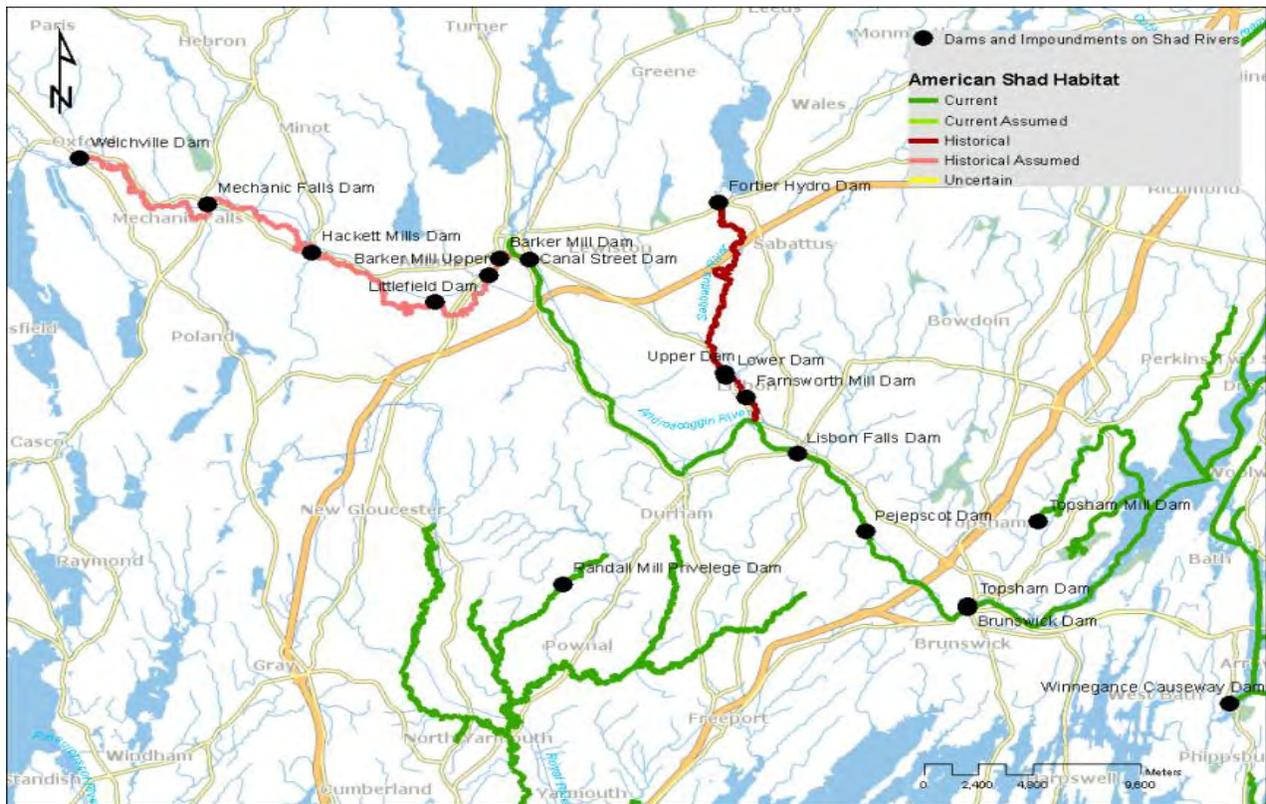


Figure 5. Androscoggin River American shad habitat. Historical habitat is above dams with no fish passage. The upper portion of the Royal River also is shown at the bottom of the figure.

Available Data

- Adult American shad counts, Maine DMR
- Juvenile Abundance, Maine DMR
- Video monitoring of shad behavior downstream of Brunswick Fishway, Bowdoin College
- Maine DEP water quality reports
- USFWS. 1983. American Shad Habitat in the Gulf of Maine.
<http://www.fws.gov/r5gomp/gom/habitatstudy/metadata/shadhab83.htm>
- USFWS. 2013. GIS Data at the Gulf of Maine Coastal Program.
<http://www.fws.gov/r5gomp/gisindex.htm>

Threat(s)

- Barriers to migration
- Past water quality (no longer considered to be a threat)
- Invasive species (possible, not studied)

American shad historically spawned in the Androscoggin River from Merrymeeting Bay to Lewiston Falls, and in the Little Androscoggin River from its confluence with the Androscoggin to Biscoe Falls. However, construction in 1807 a low-head dam at the head-of-tide on the Androscoggin River caused the abundant American shad run to decline sharply.

Barriers to migration. In 1980 the U.S. Fish and Wildlife Service developed conceptual drawings for a vertical slot fishway for the Brunswick Project, which is located at the head-of-tide on the Androscoggin River. The fishway was designed to pass 85,000 American shad and 1,000,000 alewives annually. The upstream passage facility was one of the first vertical slot fishways designed to pass American shad on the east coast, and was a scaled-down version of a fishway located on the Columbia River. Redevelopment of the Brunswick Project and construction of the fishway was completed in 1983. The completed fishway was 570 feet long, and consisted of 42 individual pools with a one-foot drop between each. Downstream passage consisted of a 12-inch pipe located between two turbine intakes. When the Federal Energy Regulatory Commission issued a license for the Brunswick Project in 1979, it did not require efficiency studies for the upstream and downstream passage facilities.

Maine DMR initiated an anadromous fish restoration program in the Androscoggin River after fish passage was installed the Brunswick Project dam, and just prior to the installation of passage in 1987 and 1988 at the next two upstream projects. Between 1985 and 2008, a total of 7,882 prespawn American shad from in-state (Cathance and Androscoggin rivers) and out-of-state (Merrimack and Connecticut rivers) sources were stocked into spawning habitat below Lewiston Falls. In addition, approximately 5.6 million shad fry were stocked into these waters between 1999 and 2008.

Currently the factor limiting successful American shad restoration to the Androscoggin is the lack of effective passage at the Brunswick Project. Neither the Brunswick vertical slot fishway nor a similar one at the Rainbow Dam on the Farmington River, CT, has proven to be successful at passing American shad. Visual observations, underwater videography, and radio telemetry studies conducted at the Brunswick Project by Maine DMR in cooperation with the U.S. Fish and Wildlife Service have shown that American shad swim past the fishway entrance repeatedly, but rarely enter it. The few shad that enter the fishway rarely ascend beyond the corner pool, and in 37 years of operation only 1,553 American shad have used the fishway.

In February 2011, NextEra Energy, owner of the Brunswick Project, agreed to conduct an experiment to determine whether upstream passage of American shad could be improved by increasing the amount of attraction water at the fishway (see Video Monitoring below).

Past water quality. After dams confined American shad to the tidal portion of the river, severe water pollution virtually eliminated the population. American shad that continued to reproduce in the six-mile stretch of river below Brunswick supported significant commercial fisheries until the

late 1920's. By the early 1930s, severe water pollution from upstream industries and municipalities had caused declines in many fish species. Water pollution abatement efforts that began in the early 1970s resulted in the dramatic improvement of water quality in the Androscoggin River.

Invasive species. White catfish, carp (*Cyprinus carpio*), and Northern pike populations are known to be increasing in the lower Androscoggin River, in the portion where American shad spawning occurs and where juvenile shad are found. The effect of these invasive species on shad populations is not known, however white catfish are known to eat fish eggs of native species.

Agencies with Regulatory Authority

Maine DMR, USFWS, NOAA, Maine DEP, Brookfield Renewable Energy (formerly NextEra, formerly Florida Power and Light)

Other Organizations

Bowdoin College, University of Maine, Bates College, University of Southern Maine, Androscoggin River Alliance, Friends of Merrymeeting Bay

Current Action and Progress

Juvenile Abundance Surveys. See description in State-Wide Information above.

Monitoring and Passage. Fisheries personnel monitor American shad during their spawning migration at the Brunswick Fishway on the Androscoggin River. Shad are counted and passed upstream as they are encountered at the top of the fishway, after the shad have volitionally passed the 42 pools of the fishway. Biological sampling (length, weight, sex, and scale sample) is not performed on live American shad because the run levels continue to be extremely low, and any handling may cause mortality. Sampling is performed on American shad that have experienced fish passage mortality. Passage of American shad has remained low – only 11 were passed in 2012, and only 289 total passed in all years of the data series (Figure 6).

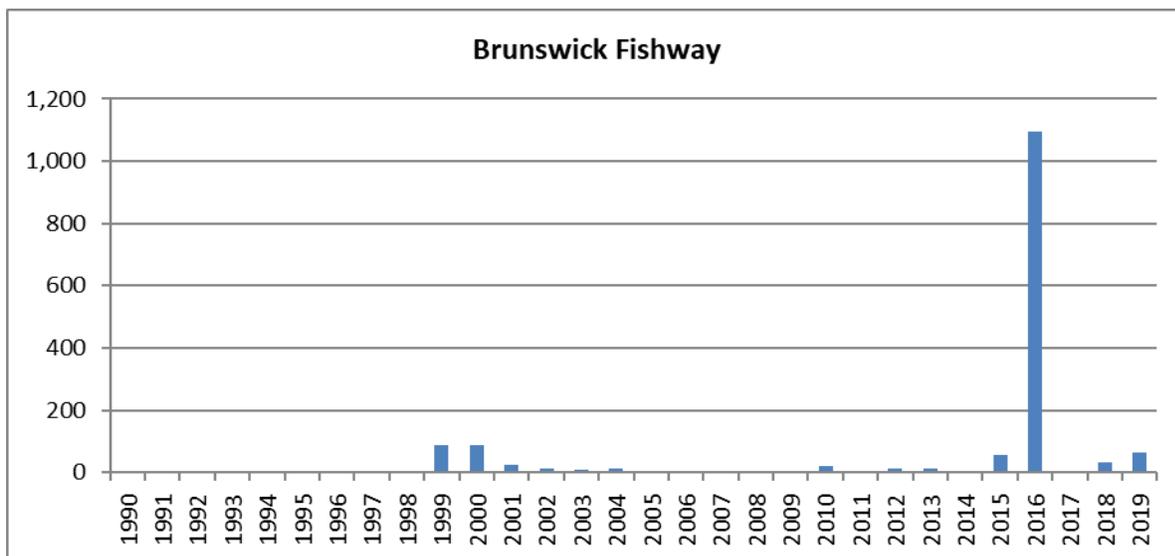


Figure 6. American shad passed above the Brunswick fishway from 1990 to 2019.

Video monitoring. In 2011 and again in 2013, John Lichter of Bowdoin-Bates-USM research group along with his summer research students, Bob Richter of Brookfield Renewable Power, Neil Ward of the Androscoggin River Alliance, and Gail Wippelhauser of the Maine DMR collaborated on an experiment to determine whether upstream passage of spawning American shad at Brunswick Fishway could be improved by increasing the attraction flow at the fishway entrance. Two current inducers were installed adjacent to the fishway entrance. The presence and behavior of American shad was monitored with two underwater cameras, one located in the river about 40 m feet downstream of the fishway entrance to confirm the presence of shad in the river, and a second one placed adjacent to the fishway entrance. Digital video recorders, computers, and software were installed in the fish ladder control room. Salmonsoft@ software was used to record video images when a fish crossed in front of each of the cameras.

In 2011, inducers were turned on and off over alternating two-hour periods. Approximately 16,558 American shad were counted at the lower camera, although previous telemetry studies have shown that an individual may swim past this part of the river multiple times per day. The fish were active primarily during the day for a period of 5-6 h, beginning 1-2 hours before high slack water and continuing for 3-4 hours into the ebb tide. A total of 91 American shad were seen at the entrance of the fishway. More fish were seen at the entrance in the afternoon than in the morning, and more fish were seen when the current inducers were turned on (54) than when the inducers were off (37). However, the current inducers were more effective in the morning than in the afternoon. In 2013, two current inducers were installed adjacent to the fishway entrance and were alternately turned off for 24 hours (attraction water of 100 cfs) then on for 24 hours (attraction water of 180 cfs) with the change occurring at noon every day. Approximately 500 of the nearly 25,000 shad viewed at the lower camera made it to the entrance of the fish ladder. To date, we have only completed roughly 2/3rds of the 2013 video data analysis. Equipment damage related to flooding prevented the study in 2012.

Because it is not clear how many of the 16,000-25,000+ shad viewed at the lower camera circled around the far side of the river after failing to find the fish ladder and were subsequently recounted in the lower camera, we conducted a study to determine shad movement patterns in the tailrace of the dam in 2014. There appears to be some number of thousands of shad trying to navigate past the Brunswick Hydroelectric facility each year. Previous work with Michael Brown of the Maine DMR and John Lichter, Bowdoin College, showed that shad will spawn in the tidal waters of the lower Androscoggin if they cannot pass the dam.

Goals and Recommended Actions

- Conduct population estimates for adults spawning in the lower Androscoggin River
- Map young-of-year habitat based on existing beach seine surveys
- Continue fishway efficiency studies at Brunswick Fishway that document poor passage by adult American shad
- Monitor water chemistry (DO, turbidity, pH, temperature, conductivity) during spawning season
- Study impact of invasive species populations on shad populations

The timeline and associated costs of these recommended actions has not been determined.

Kennebec and Sebasticook Rivers

Amount of Habitat

The Kennebec watershed contains 407.6 river kilometers of potential American shad habitat. Of this, 300.4 river kilometers are currently accessible (though accessibility to habitat above dams with fish passage is limited), while the remaining 107.2 river kilometers are inaccessible due to obstructed fish passage (Table 1).

The watershed contains two major spawning areas, the mainstem Kennebec River below Lockwood Dam and the Sebasticook River below Benton Falls Dam (Figure 7). While passage above these is considered possible because both dams have fish lifts, actual passage by American shad has been documented to be very low (Figure 8), and the majority of spawning is thought to occur below the first mainstem dams.

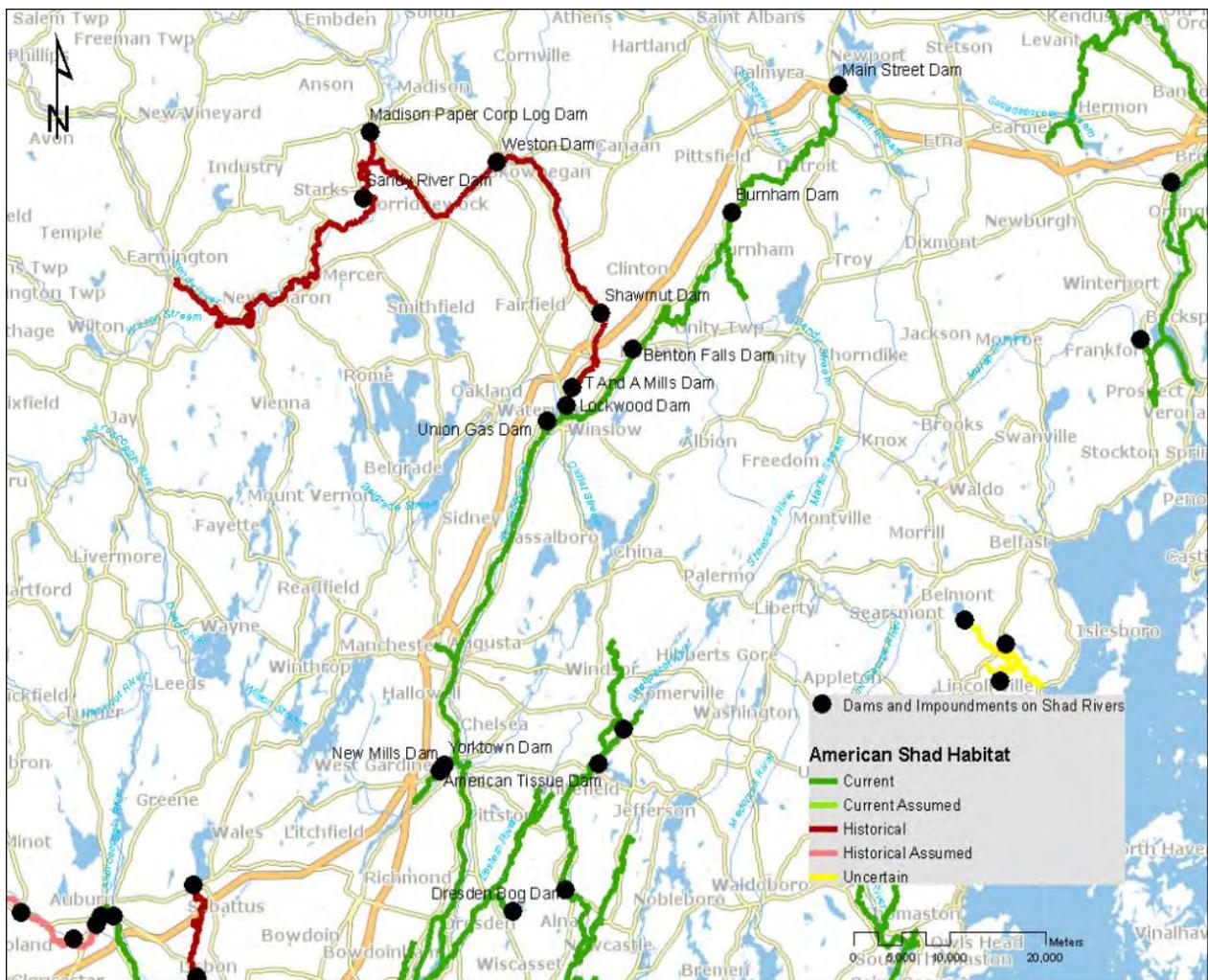


Figure 7. American shad habitat in the Kennebec and Sebasticook rivers. Historical habitat is above dams with no fish passage. The upper portion of the Sheepscot River also is shown at the bottom of the figure, in close proximity to the lower Kennebec River.

Available Data

- Adult American shad counts, Maine DMR
- Juvenile Abundance, Maine DMR
- Maine DEP water quality reports
- USFWS. 1983. American Shad Habitat in the Gulf of Maine.
<http://www.fws.gov/r5gomp/gom/habitatstudy/metadata/shadhab83.htm>
- USFWS. 2013. GIS Data at the Gulf of Maine Coastal Program.
<http://www.fws.gov/r5gomp/gisindex.htm>

Threat(s)

- Barriers to migration
- Past water quality (no longer considered to be a threat)
- Invasive species (possible, not studied)

Barriers to migration. The Kennebec River Restoration Program was initiated following the development of a Strategic Plan in 1985, an Operational Plan in 1986, and the signing of an Agreement in 1986 between the Maine DMR and the Kennebec Hydro Developers Group (KHDG). This Agreement provided a delay in fish passage requirements at seven hydropower facilities above Augusta in exchange for funds to initiate the restoration by means of trap-and-truck of river herring and American shad to selected upriver spawning and nursery habitat. In 1998, a new Agreement between state and federal fisheries agencies and the members of the KHDG was signed. The new Agreement provided for the removal of Edwards Dam, included new timetables or triggers for fish passage at the seven hydropower facilities above Augusta, and provided additional funds to continue the restoration by trap-and-truck. In 2006, the Kennebec River Restoration Program entered a new phase when upstream anadromous fish passage became operational at the Benton Falls, Burnham, and Lockwood hydropower projects (Figure 7).

Upstream passage at the Burnham and Benton Falls was required to be operational one year following the installation of permanent or temporary upstream fish passage at Fort Halifax and following installation of permanent upstream fish passage at four upriver non-hydro dams. These projects included the implementation of interim upstream passage measures at Fort Halifax dam and the construction of fishways at the Pleasant Pond dam in Stetson, the Plymouth Pond dam in Plymouth, the Sebasticook Lake outlet dam in Newport and the removal of the Guilford dam in Newport. Passage at the Benton Falls Dam was established in 2006 by way of a fish lift. The top of the lift contains a watered holding area leading to a large fish excluder, a gate with vertical bars spaces 2” apart to prevent larger fish from passing in an effort to minimize invasive species passage. All American shad passing Benton Falls must be manually passed upstream over this excluder grate. A fish lift also provides passage at the Burham Dam, however no upstream excluder panel prevents free passage of shad once they pass the fish lift.

The Lower Kennebec River Comprehensive Hydropower Settlement Accord requires that the Licensee install a trap, lift, and transfer facility at the project’s powerhouses at Lockwood Dam. These facilities were operational in 2006. American shad that reach the top of the fish lift are passed upstream, however the next dam 1.9 river kilometers upstream has no fish passage capabilities.

The potential for these locations to pass American shad is thought to be low to moderate. The ability of shad to locate the fish lift entrance is likely hindered by attraction flows from large spillways. Further, at Benton Falls Dam there is evidence that shad remain in holding areas undetected, as evidenced by a large proportion of “passed” shad found only when the facilities are periodically de-watered, and only few shad passed during normal operations (Maine DMR ASMFC Compliance 2011 Report). However, this effect may be a result of flow differentials between the downstream portion of the dam and the headpond. Shad may remain in the portion between the fish lift and the headpond for longer periods of time because the flow is much lower than the tailraces, and use this time for resting.

Past water quality. Water pollution from upstream industries and municipalities in the early to mid-20th century had significant impacts on water quality in the Kennebec watershed and was thought to cause declines in many fish species populations. Water pollution abatement efforts that began in the early 1970s resulted in the dramatic improvement of water quality in the Kennebec and Sebasticook rivers. While water quality has drastically improved over the past forty years, high levels of PCBs and some toxic contaminants are still found in many resident fish species.

Invasive species. White catfish and carp (*Cyprinus carpio*) populations are known to be increasing in the Kennebec and Sebasticook rivers, in the portion where American shad spawning occurs and where juvenile shad are found. The effect of these invasive species on shad populations is not known, however white catfish are known to eat fish eggs of native species.

Agencies with Regulatory Authority

Maine DMR, USFWS, NOAA, Maine DEP, Brookfield Renewable Energy (formerly NextEra, formerly Florida Power and Light), KEI (USA) Power Management Inc., Benton Falls Associates (Essex Hydro Associates), Kennebec Hydro Developers Group

Other Organizations

Friends of Merrymeeting Bay, Kennebec Estuary Land Trust, Sportsman’s Alliance of Maine

Current Action and Progress

Juvenile Abundance Surveys. See description in State-Wide Information above.

Monitoring and Passage. Fisheries personnel monitor American shad during their spawning migration at the Lockwood Dam on the Kennebec River and the Benton Falls Dam on the Sebasticook River. Shad are counted and passed upstream as they are encountered at the top of the fishway, after the shad have volitionally entered the fish lift. Biological sampling (length, weight, sex, and scale sample) is not performed on live American shad because the run levels continue to be extremely low, and any handling may cause mortality. Sampling is performed on American shad that have experienced fish passage mortality. Passage of American shad has remained low – only 44 were passed in 2019 at the Lockwood Dam, and only 1,625 total since the fish lift at Lockwood was operational. Passage at Benton Falls Dam remains low: in 2019, 114 shad passed upstream (Figure 8).

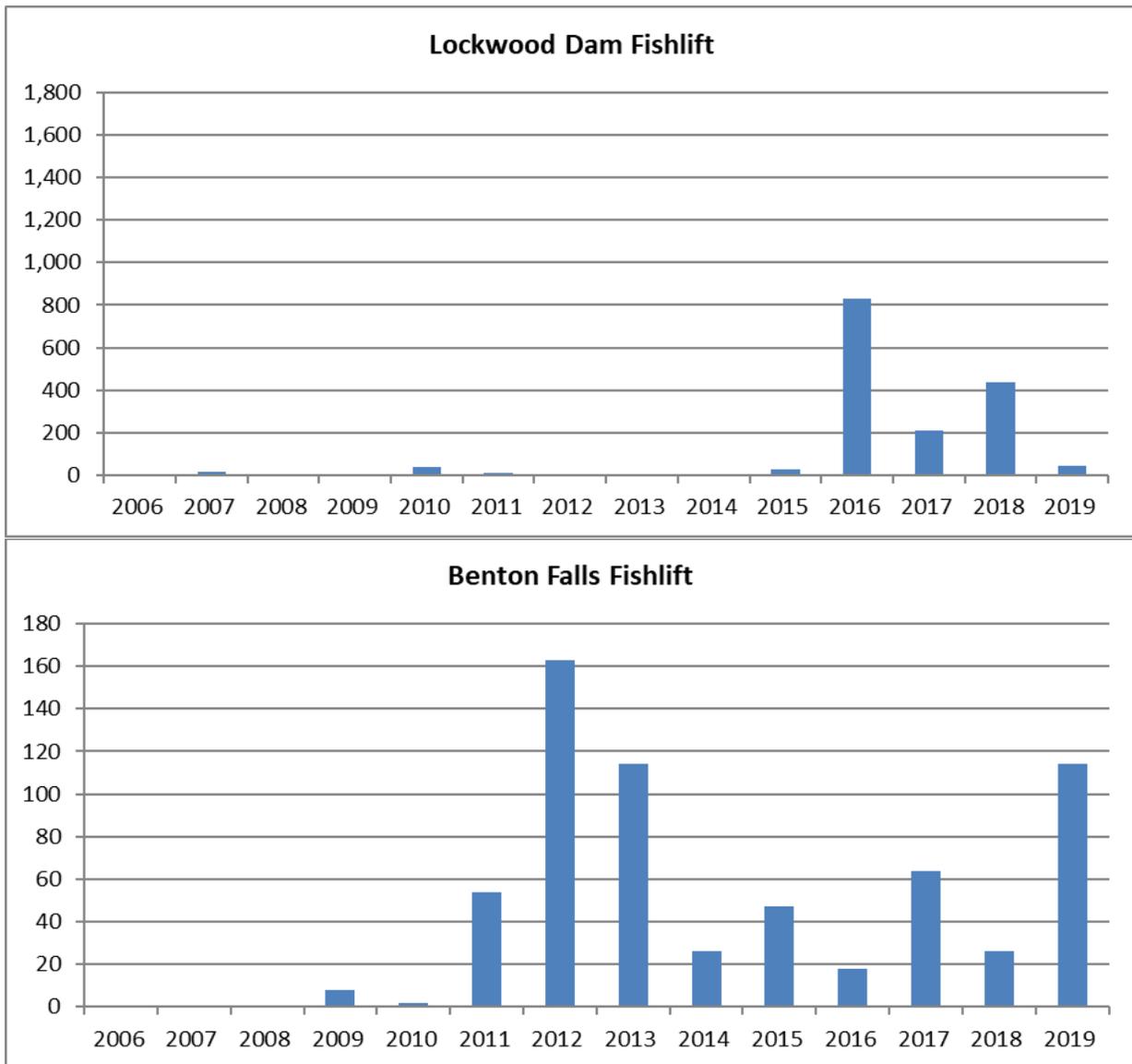


Figure 8. American shad passage at two counting locations in the Kennebec watershed. Fish passage was not operational before 2006.

Goals and Recommended Actions

- Ground-truth spawning habitat in the mainstem Kennebec and Sebasticook rivers
- Conduct population estimates for spawning adults
- Map young-of-year habitat based on existing beach seine surveys
- Develop fishway efficiency studies at Benton Falls and Lockwood fish lifts
- Conduct downstream passage studies at Benton Falls for both adult and juvenile American shad
- Monitor water chemistry (DO, turbidity, pH, temperature, conductivity) during spawning season
- Study impact of invasive species populations on shad populations

The timeline and associated costs of these recommended actions has not been determined.

Penobscot River

Amount of Habitat

The Penobscot watershed contains 786.3 river kilometers of potential American shad habitat. Of this, only 399.6 river kilometers are currently accessible (though accessibility to habitat above dams with fish passage is limited), while the remaining 386.7 river kilometers are inaccessible due to obstructed fish passage (Table 1).

Though few adult shad have been captured at the lower mainstem dams as part of fishway operations, recent summer trawl surveys conducted in the lower portion of the river have captured juvenile American shad (Lipsky and Saunders 2013). In 2004, 12 juvenile American shad were electrofished downstream of the Veazie Dam but none were captured during extensive upriver sampling (mainstem Penobscot from Veazie to the confluence of the East and West Branch in East Millinocket, the West Branch Penobscot to the outlet of Seboomook Lake, the East Branch Penobscot to Grindstone Falls, the Piscataquis River, the Stillwater River, Passadumkeag Stream, Pushaw Stream, and Millinocket Stream) (Yoder et al. 2004).

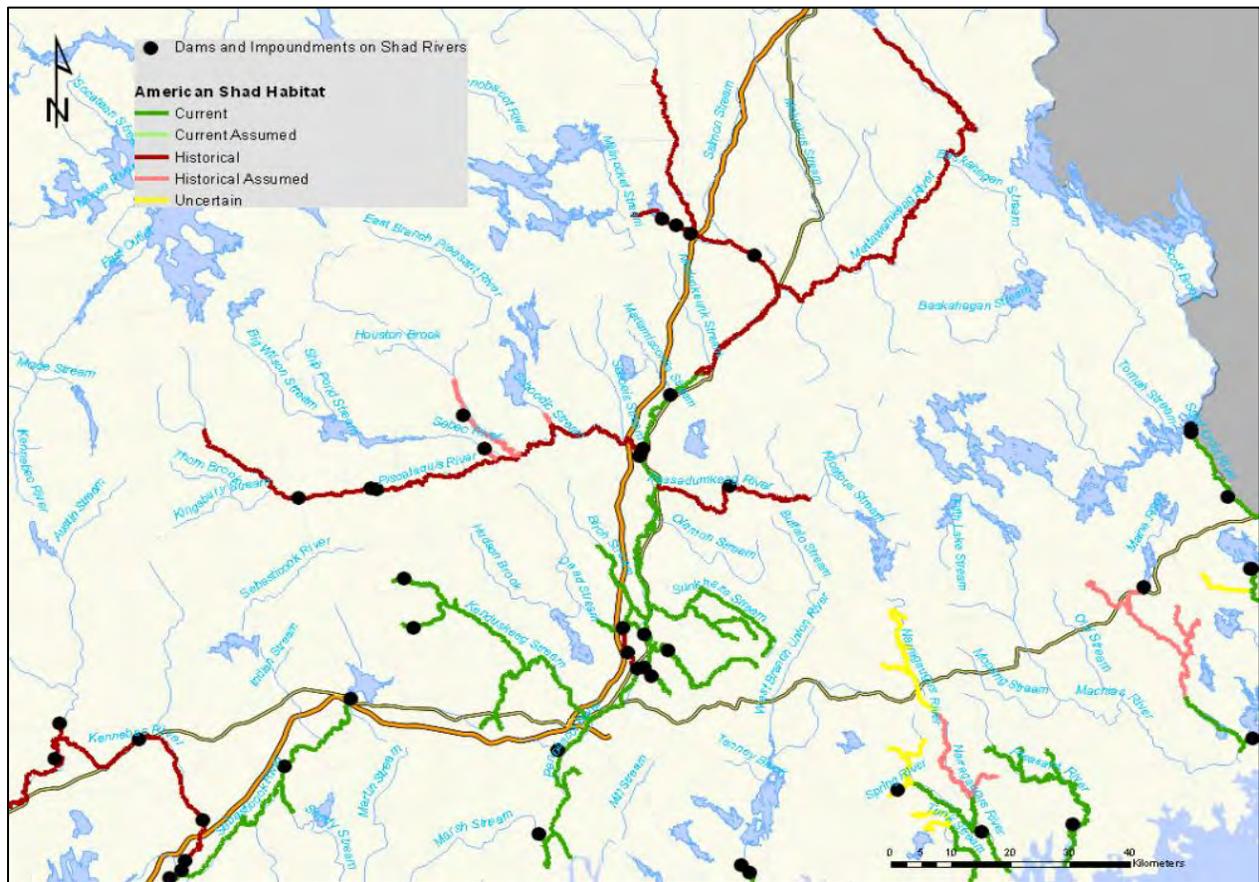


Figure 9. American shad habitat in Penobscot watershed. Historical habitat is above dams with no fish passage. The upper portion of the Kennebec River also is shown at the bottom left the figure, and the Narraguagus, Pleasant, and East Machias rivers appear in the bottom right.

Available Data

- Adult American shad counts, Maine DMR
- Fish community survey data, NOAA
- Maine DEP water quality reports
- USFWS. 1983. American Shad Habitat in the Gulf of Maine.
<http://www.fws.gov/r5gomp/gom/habitatstudy/metadata/shadhab83.htm>
- USFWS. 2013. GIS Data at the Gulf of Maine Coastal Program.
<http://www.fws.gov/r5gomp/gisindex.htm>

Threat(s)

- Barriers to migration
- Possible water quality

Barriers to migration. Until recently, mainstem dams in the lower portion of the Penobscot River have limited fish passage by all species, and reduced the amount of spawning habitat for American shad by more than half of the potential area. In 2004, the Lower Penobscot River Settlement Accord was signed, a multi-party agreement which laid the framework for the Penobscot River Restoration Project (PRRP). Through this project, the Penobscot Trust purchased the Veazie, Great Works, and Howland Dams in 2010 with the goal of dam removal or fish passage at each location. Five major projects are part of this effort to improve migratory fish passage and habitat in the lower Penobscot River:

- Removal of Great Works Dam in 2012
- Upgrade of Old Town Fuel & Fiber water intake in 2012 to reduce fish interaction
- Removal of Veazie Dam in 2013
- Installation of a fish lift at Milford Dam in 2013; and
- Decommissioning and construction of a bypass at Howland Dam

Before these projects were completed, limited access was available to American shad by way of upstream passage at the Veazie Dam, and two Denil fishways at the Great Works Dam.

Water quality. In the early 20th century, severe water pollution from upstream industries and municipalities had had a significant impact on fish populations. Water pollution improvement efforts that began in the early 1970s resulted in the dramatic improvement of water quality, however many paper mills and other industry still operate on the river. While the PRRP has addressed some known issues with water intake, others may exist.

Agencies with Regulatory Authority

Maine DMR, USFWS, NOAA, Maine DEP, Black Bear Hydro Partners, LLC, Penobscot River Restoration Trust, PPL Corporation

Other Organizations

Penobscot Indian Nation, American Rivers, Atlantic Salmon Federation, Maine Audubon, Natural Resources Council of Maine, and Trout Unlimited

Current Action and Progress

Barrier removal and passage facilities. Recent work has opened habitat in the lower portion of the Penobscot River through removal of the Great Works and Veazie dams, and upcoming installation of a fish lift at Milford Dam and bypass at the Howland Dam. The result of these projects on American shad will likely not be seen for a few years.

Before the Veazie Dam was removed, few American shad were provided upstream passage at the fish trap installed at that dam – since 1978, fewer than twenty adult spawning shad were passed. It is likely that the majority of shad in the Penobscot River remained below the dam, and any spawning occurred in the mainstem.

Fish community surveys. NOAA Northeast Fishery Science Center (NEFSC) Maine Field Station has conducted fish community monitoring since 2010 in the Penobscot Estuary. The survey has relied on a combination of fixed (seine and fyke) and mobile (trawl) capture gear combined with mobile hydroacoustics to describe relative abundance and species composition in the estuary. Sampling has generally occurred from April through October at weekly to monthly intervals depending on the year, season and gear. Twelve seine sites are distributed from 10 to 40 kilometers downstream of head-tide, four fyke sites at 12 and 25 kilometers downstream of head-tide and trawls from 15 to 55 kilometers downstream of head-tide. A total of 67 species have been identified including 10 diadromous, 27 freshwater and 30 marine life histories. Most dominant in the surveys by number are the clupeids namely *Clupea harengus* with *Alosa* species most common in percent occurrence. The survey has been successful in establishing systematic methods of sampling and has provided a platform for several researchers interested in estuary species such as: *Salmo salar*, *Fundulus heteroclitus*, *Osmerus mordax*, *Microgadus tomcod*, *Alosa pseudoharengus*, *Alosa aestivalis*, and *Alosa sapidissima*.

One of the objectives of the Penobscot Estuary survey was to describe temporal and spatial distributions of diadromous species including American shad. It is believed the Penobscot has a remnant population of American shad through anecdotal reports from anglers and infrequent occurrence at the Veazie Dam fishway trap operated by the Maine DMR. Seine surveys conducted in collaboration with the Maine DMR in 2010 - 2012, confirmed presence of young-of-year (YOY) American shad in the estuary and 2011-2013 trawl surveys have confirmed presence of age- 1 juveniles. Lipsky and Saunders (2013) summarized YOY distribution in the Penobscot and determined that due to salinity intolerance, the YOY are likely the result of natural reproduction from the Penobscot rather than larval drift from other spawning locations.

Seine and fyke catch data have shown that most (40% of total) YOY shad are captured in September but are present from July through November. Captures were most common (45% of total) in the tidal freshwater reaches of the estuary, 8-15 kilometers below head of tide. However, captures did occur in higher salinity (10-20 ppt) areas over 45 kilometers from head of tide. Trawl data suggests some age- 1 American shad utilize the Penobscot estuary in their second summer for rearing. Trawls in 2011 to 2013 have captured 750 individuals between 9 and 27 cm total length. For the trawl, most captures occur at the high turbidity, salinity mixing zone 20 to 30 kilometers downstream of head tide.

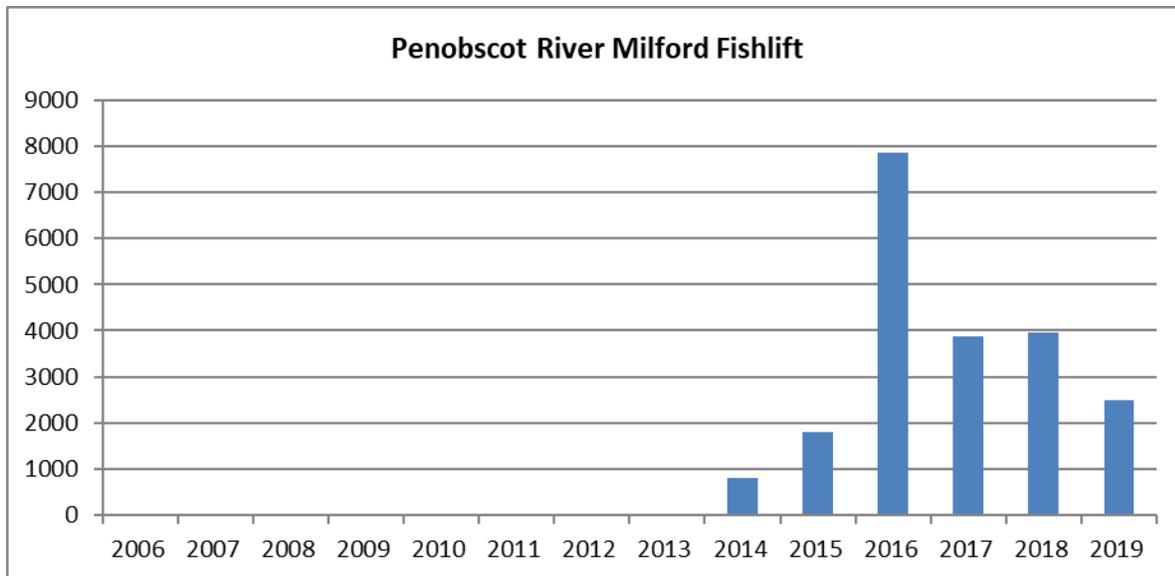


Figure 9. American shad passage at the Milford fish lift in the Penobscot River watershed. Fish passage was not operational before 2014.

Goals and Recommended Actions

- Ground-truth spawning habitat in the lower Penobscot River once the PRRP current objectives are complete
- Conduct population estimates for spawning adults
- Map young-of-year habitat based on existing beach seine surveys
- Develop fishway efficiency studies at Milford fish lift after sufficient time has passed for shad populations that may have spawned below the Great Works Dam have “found” their way upstream (part of current FERC license)
- Conduct downstream passage studies at Milford fish lift for both adult and juvenile American shad
- Monitor water chemistry (DO, turbidity, pH, temperature, conductivity) during spawning season
- Continued work to open habitat further upstream

Timeline

Current summer trawl surveys have documents American shad juveniles in the Penobscot River, however, with the large-scale changes occurring under the PRRP, dedicated work towards identifying spawning habitat and performing fish passage efficiency studies may be more productive after sufficient time has passed to allow fish populations to respond. Under the assumption that the PRRP work will be complete by 2016, it is suggested that the above recommendations be implemented in 2021, with the exception of water chemistry sampling which should be implemented at the Milford fish lift when it is operational. Adult shad counts and fish community surveys should continue annually.

Associated Costs

To accomplish the goals of the PRRP, it is estimated that ~\$55 million is needed (Penobscot Restoration Trust 2013).

References

- Haro, A., M. Odeh, T. Castros-Santos, J. Noreika. 1999. Effect of Slope and Headpond on Passage of American Shad and Blueback Herring through Simple Denil and Deepened Alaska Steeppass Fishways. *N. Am. J. of Fish. Mgmt.* 19: 51-58.
- Lipsky, C and Saunders, R. 2013. Evidence of successful spawning of American shad in the Penobscot River, Maine. Poster presented at Diadromous Species Restoration Research Network Science Meeting, University of Maine, Orono, Maine January 10-11, 2013.
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- Slatick, E. and L. R. Basham. 1985. The Effect of Denil Fishway Length on Passage of Some Nonsalmonid Fishes. *Marine Fisheries Review* 47(1): 83-85.
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American Shad Habitat Plan for New Hampshire Coastal Rivers

New Hampshire Fish & Game Department
Marine Fisheries Division

December 2020

This habitat plan is submitted by the New Hampshire Fish and Game Department as a requirement of Amendment 3 to the Interstate Fishery Management Plan for Shad and River Herring. Historically populations of American shad have been present in the coastal waters of New Hampshire including the Merrimack River, Connecticut River, and major tributaries of Great Bay Estuary. However, over the past 30 years of monitoring by the Department the number of returning American shad adults has been highly variable and in significant decline over the past 10 years. This plan outlines the current and historic habitat for American shad within NH coastal rivers. The greatest threat identified to the successful restoration of the species is the presence of dams along the rivers. Dams fragment the habitat and may further reduce the numbers entering fresh water due to the absence of a fish passage structure or poor passage efficacy for American shad of the existing structure.

The 2020 Atlantic States Marine Fisheries Commission's American Shad Stock Assessment and Peer Review Report provides an extensive review of available literature and discussion on the topic of fish passage (ASMFC 2020). Specifically, it highlights the issues with lack of evaluation and performance from decades-old approaches, facilities designs/operations that are not effective, and therefore cannot reasonably be expected to achieve management and restoration goals without significant changes. The Assessment Report also provides an important quantitative modeling approach examining shad habitat and passage barriers, and the need to address status quo fish passage performance. The impacts of these barriers and status quo passage are described and also modeled as effects on spawner population size under three scenarios, 1) no barriers, 2) first barrier with no passage, and 3) realistic fish passage performance measures applied to barriers (e.g., upstream passage efficiency of 50%).

The Assessment Report used standardized data and modelling approaches that quantified the impacts of barriers and fish passage as significant in all three management areas examined based on shad life history and habitat (New England, Mid-Atlantic, and South Atlantic). The assessment determined that overall, dams completely or partly block nearly 40% of the total habitat once used by American Shad. The model results of the "no barriers" scenario yielded an estimated spawner production potential 1.7 times greater than that yielded by the scenario assuming no passage at the first barrier: 72.8 million versus 42.8 million fish. The results of the third model scenario, which applies "realistic" (i.e., current) fish passage efficiencies, resulted in a gain of less than 3 million fish. Conclusions include "losses in (spawner production) potential are significant in each state and region." The Assessment Report provides a strong justification for the need and benefits of requiring improved fish passage performance measures. Additionally, meeting such improved passage performance standards is now an achievable goal given the

current state of knowledge on fish behavior, swimming performance, and fish passage engineering expertise.

1) Habitat Assessment

a) Spawning Habitat

Exeter River:

i) *Amount of historical in-river and estuarine spawning habitat:*

The headwaters of the Exeter River are in Chester, NH and the river flows approximately 75.7 rkm into Great Bay in Newfields, NH. The current surface area of the Exeter River from headwaters to river mouth is approximately 246.6 hectares. The tidal portion of the surface area accounts for half of the total area (123.6 hectares). These surface areas were calculated from current water levels and include impoundments created by existing dams which would reduce total surface area upon their removal.

ii) *Amount of currently accessible in-river and estuarine spawning habitat (i.e., habitat accessible to adult fish during the upstream spawning migration).*

Anadromous fish, including American shad, currently have access to approximately 38.1 rkm, which includes 10.2 rkm of tidal waters. The freshwater access for American shad spawning area is the remaining 27.9 rkm and is bounded upriver by Crawley Falls in Brentwood, NH. Currently access is available to 62.0 hectares of the freshwater portion of the Exeter River, or approximately 25% of the total surface area of the river.

Lamprey River:

i) *Amount of historical in-river and estuarine spawning habitat:*

The headwaters of the Lamprey River are in Northwood, NH and the river flows approximately 80.2 rkm into Great Bay in Newmarket, NH. The current surface area of the Lamprey River from headwaters to river mouth is approximately 255.7 hectares. The tidal portion of the surface area accounts for 15% of the total area (38.1 hectares). These surface areas were calculated from current water levels and include impoundments created by existing dams which would reduce total surface area upon their removal.

- ii) *Amount of currently accessible in-river and estuarine spawning habitat (i.e., habitat accessible to adult fish during the upstream spawning migration).*

Anadromous fish, including American shad, currently have access to approximately 21.4 rkm, which includes 3.0 rkm of tidal waters until reaching the Macallen Dam Fish Ladder in Newmarket, NH. The freshwater access for American shad spawning area is the remaining 18.4 rkm and is bounded upriver by the Wadleigh Falls Dam site (breached) in Lee, NH. Currently access is available to 68 hectares of the freshwater portion of the Lamprey River, or approximately 31% of the total surface area of the river.

b) Rearing Habitat

- i) *Amount of historical in-river and estuarine young-of-year rearing habitat (e.g., river kilometers, water surface area (hectares)).*

In addition to the in-river spawning habitat for each of the rivers, American shad have access to 2,494.4 hectares of possible rearing habitat in Great Bay Estuary. Below the estuary, the Piscataqua River flows an additional 21.14 rkm to the Atlantic Ocean with a surface area of approximately 2,106.3 hectares including Little Harbor.

- ii) *Amount of currently utilized in-river and estuarine young-of-year rearing habitat (i.e., habitat available to larval stage and young-of-year fish through natural spawning or artificial stocking of hatchery reared juvenile fish).*

The amount of rearing habitat that is currently used is unknown, but the amount of available rearing habitat is equal to the accessible spawning habitat (see sections "a)", part "i" above) within each river plus the estuarine habitat identified (see sections "b)", part "i" above).

2) Threats Assessment – Inventory and assess the critical threats to habitat quality, quantity, access, and utilization (see - Appendix C for a detailed habitat description). For those threats deemed by the state or jurisdiction to be of critical importance to restoration or management of an American shad stock, the state or jurisdiction should develop a threats assessment for inclusion in the Habitat Plan. Examples of potential threats to habitat quality, quantity, and access for American shad stocks include:

a) *Barriers to migration inventory and assessment*

- i) *Inventory of dams, as feasible, that impact migration and utilization of historic stock (river) specific habitat. Attribute data for each dam should be captured in an electronic database (e.g., spreadsheet) and include: name of dam, purpose of the dam, owner, height, width, length, impoundment size, water*

storage capacity, location (i.e., river name, state, town, distance from river mouth, geo-reference coordinates), fish passage facilities and measures implemented (i.e., fish passage type, capacity, effectiveness, and operational measure such as directed spill to facilitate downstream passage), and information source (e.g., state dam inventory).

I. Exeter River:

Description:

The Exeter River drains an area of 326 square km in southern NH. The river flows east and north from the Town of Chester to the Town of Exeter. It empties into Great Bay northeast of Exeter. The head-of-tide occurs at the Town of Exeter and the saltwater portion of the river is called the Squamscott River.

There is one man-made barrier to American shad migration on the main stem Exeter River. The Pickpocket Dam in Brentwood occurs at river kilometer 22.4 and is 4.6 meters high. The New Hampshire Fish & Game Department (NHFGD) constructed a Denil fishway at the dam sometime around 1970 for anadromous fish. There is no downstream fish passage facility on the dam so emigrating adult and juvenile shad must pass over the spillway when river flows allow. The next barrier above Pickpocket Dam is a natural waterfall at rkm 38.1.

Recommended Action:

Due to low shad numbers in the Exeter River, it is unknown how effective the Pickpocket Dam fishway is at shad passage. With higher shad returns to the Pickpocket Dam fishway, efficiency could be determined.

Regulatory Agencies/Contacts:

Dam Owners:

Pickpocket Dam:
The Town of Exeter, NH
Public Works Department
Jennifer R. Perry
13 Newfields Rd, Exeter, NH 03833

The Dam Bureau of the New Hampshire Department of Environmental Services (NHDES) oversees the maintenance, construction, and operation of all dams in the state.

NH Department of Environmental Services, Dam Bureau
James Gallagher
29 Hazen Dr, Concord, NH 03302-0095

The NHFGD owns and operates the fishway at Pickpocket Dam and facilitates implementation, monitoring, and oversight of fish passage.

Current Action:

The fishway at the Pickpocket Dam is monitored daily from early April to late June each year to allow for the passage of river herring, American shad, and other diadromous fish to historical spawning and nursery areas. All shad passing through the fishway are captured in the trap at the top, enumerated, and passed upstream by hand. Biological samples consisting of length measurement, sex determination, and scale samples used for age determination are attempted to be collected from each shad that returns.

Goals/Target:

It is the goal of NHFGD to remove or provide passage around/over as many barriers to the migration of anadromous fish in the Exeter River as possible to provide access to historical spawning habitat. This requires the continued maintenance and operation of the existing fish ladder and efforts to identify barriers further upstream where passage may be provided through modification or restoration. Efforts should be made to increase usage of the Pickpocket Dam fishway through river/fishway modifications or complete dam removal which would allow any returning American shad access to habitat upstream.

Timeline:

No timeline has been established for improving the usage of the fishway, but NHFGD will continue monitoring the fishway and identified barriers to fish passage and will work to increase the amount of spawning habitat available to anadromous fish in the Exeter River.

Progress:

Both the former fishway at Great Dam (removed in 2016) and Pickpocket Dam have been monitored since the early 1970's. During the period 2010-2019 only two American shad have returned to the Exeter River.

In addition, NHFGD continues to work to identify barriers to anadromous fish passage within the Exeter River and work towards a resolution.

III. Lamprey River

Description:

The Lamprey River flows approximately 80 km through southern New Hampshire to the Town of Newmarket where it becomes tidal and enters the Great Bay estuary just north of the mouth of the Squamscott River. There are three potential man-made barriers to American shad migration on the main stem of the river. The Macallen Dam, located at rkm 3.8 in Newmarket, is the lowermost head-of-tide dam on the Lamprey River, and has a standard denil fishway constructed by NHFGD between 1969 and 1970. There is no downstream passage facility at the Macallen Dam and emigrating juveniles and adults must pass over the spillway. The Wiswall Dam is located 4.8 rkm above the Macallen Dam at rkm 8.6. A standard denil fishway and downstream notch for emigration of juveniles and adults were constructed in 2012. A third potential manmade barrier, Wadleigh Falls Dam (breached), occurs 12.4 rkm above Wiswall

Dam at rkm 21.4 and the ability/inability of passage by American shad at the site is currently undetermined.

Recommended Action(s):

Determine success of American shad passage through the recently constructed standard denil fish ladder at the Wiswall Dam and assess the ability of passage over the breached Wadleigh Falls Dam. If passage of anadromous fish, including American shad, is not possible then efforts should be made to work with landowners and partner agencies to allow fish to pass the barrier.

Due to low returns of American shad to the Lamprey River in recent years, it is unknown if American shad currently reach the Wiswall dam and use the standard denil fish ladder to continue upriver to the third potential barrier, Wadleigh Falls.

Regulatory Agencies/Contacts:

Dam Owners:

Macallen Dam:

The Town of Newmarket, NH
Newmarket Community Development Center
Rick Malasky
186 Main Street, Newmarket, NH 03857

Wiswall Dam:

The Town of Durham, NH
Public Works Department
Richard Reine or April Talon
100 Stone Quarry Drive, Durham, NH 03824

Wadleigh Falls Dam (breached):

Mr. Dodge
RR1, Rte 152, Lee, NH 03824

The Dam Bureau of the New Hampshire Department of Environmental Services (NHDES) oversees the maintenance, construction, and operation of all dams in the state.

NH Department of Environmental Services, Dam Bureau
James Gallagher
29 Hazen Dr, Concord, NH 03301

The NHFGD owns and operates the fishway at Macallen Dam and the Town of Durham, NH owns the fishway at Wiswall Dam and NHFGD facilitates implementation, monitoring, and oversight of fish passage.

Current Action:

The fishways at the Macallen and Wiswall Dams are monitored from early April to late June each year to allow for the passage of river herring, American shad, and other

diadromous fish to historical spawning and nursery areas. All shad passing through the Macallen fishway are captured in the trap at the top, enumerated, and passed upstream by hand. Biological samples consisting of length measurement, sex determination, and scale samples used for age determination are attempted to be collected from each shad that returns. The fishway at Wiswall Dam is operated as a swim through with no trap at the top.

Currently the Town of Newmarket is making modifications to increase the flood capacity of Macallen Dam during large rain events. They are replacing the old flood gate structure with pneumatic crest gates to increase spillway capacity. In addition, the right side dam abutment has been elevated to decrease the flood risk to an adjacent building.

Goals/Target:

It is the goal of NHFGD to remove or provide passage around/over as many barriers to the migration of anadromous fish in the Lamprey River as possible to provide access to historical spawning habitat. This requires the continued maintenance and operation of existing fish ladders and efforts to identify barriers further upstream such as Wadleigh Falls Dam (breached) where passage may be provided through modification or restoration.

Timeline:

No timeline has been established, but NHFGD will continue monitoring the fishways and identified barriers to fish passage and will work to increase the amount of spawning habitat available to anadromous fish in the Lamprey River.

Progress:

The fishway at Macallen Dam has been monitored since the early 1970's. Average annual return of American shad to the Macallen Dam fishway from 2010-2019 is less than one shad/yr. The Wiswall Dam fishway has been monitored since construction completed in 2012 through volunteer counting efforts and NHFGD electronic fish counters to estimate passage numbers and maintain ladder conditions conducive to fish passage during the spring.

NHFGD conducted a radio tagging study with river herring in 2013 to determine the passage success of river herring over the Wadleigh Falls Dam location (breached). The study results confirmed that Wadleigh Falls is a barrier to the passage of river herring. Unfortunately we are unable to determine if American shad can ascend Wadleigh Falls due the lack of returning fish.

- ii) *Inventory of other human-induced physical structures (e.g., stream crossing/culverts), as feasible, that impact migration and utilization of historic habitat (data on each structural impediment should include: type, source, and location)*-**DATA CURRENTLY NOT AVAILABLE**

iii) *Inventory of altered water quality (e.g., low oxygen zones) and quantity (e.g., regulated minimum flows that impact migration corridors and/or migration cues), as feasible, impediments that impact migration and utilization of historic habitat (data on each water quality and quantity impediment should include: type, source, location, and extent). DATA CURRENTLY NOT AVAILABLE*

iv) *Assess barriers to migration in the watershed and characterize potential impact on American shad migration and utilization of historic habitat.*

(See part “I” above)

b) *Water withdrawals inventory and assessment – DATA CURRENTLY NOT AVAILABLE*

c) *Toxic and thermal discharge inventory and assessment- DATA CURRENTLY NOT AVAILABLE*

d) *Channelization and dredging inventory and assessment- DATA CURRENTLY NOT AVAILABLE*

e) *Land use inventory and assessment- DATA CURRENTLY NOT AVAILABLE*

f) *Atmospheric deposition assessment- DATA CURRENTLY NOT AVAILABLE*

g) *Climate change assessment- DATA CURRENTLY NOT AVAILABLE*

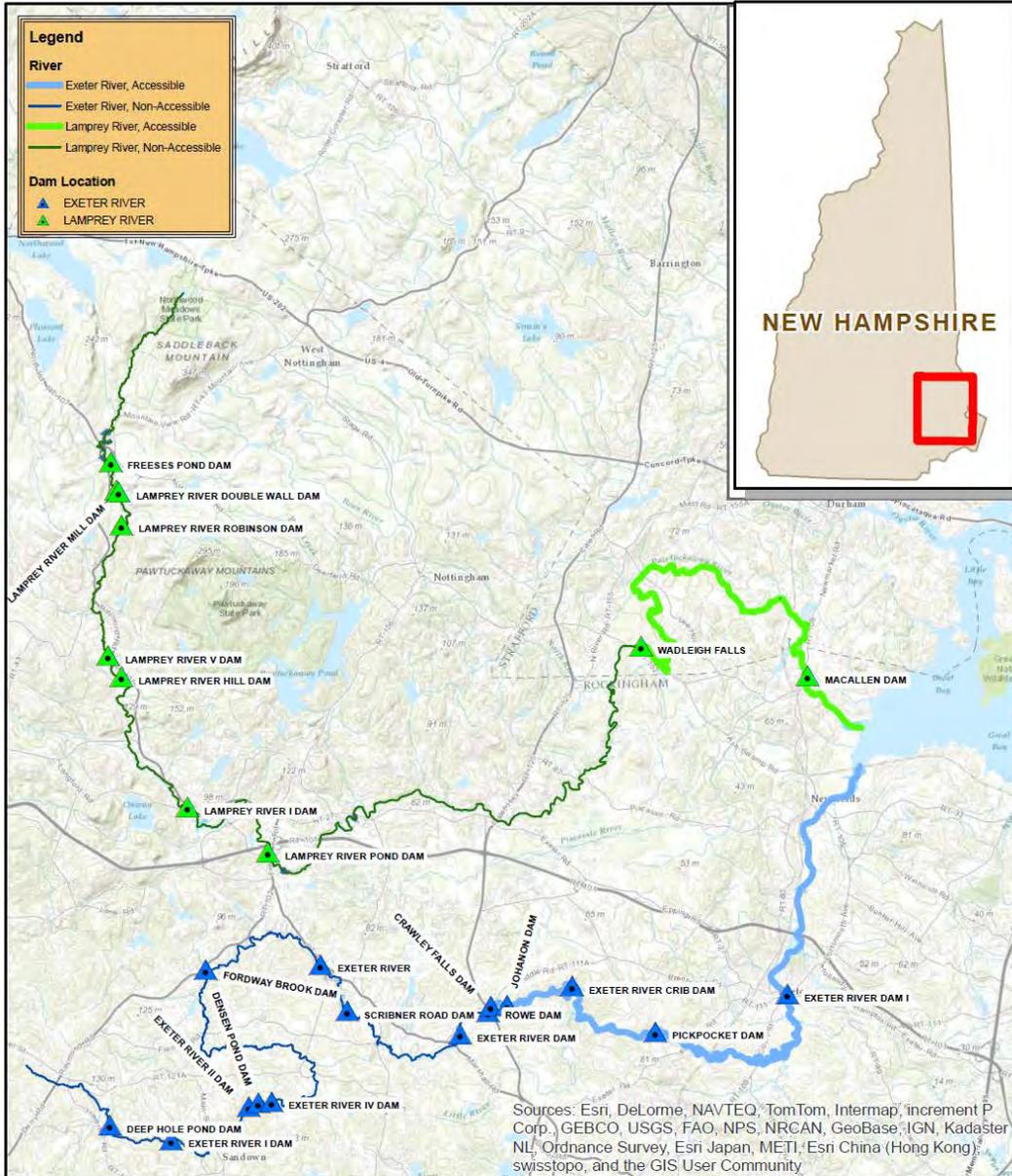
h) *Competition and predation by invasive and managed species assessment- DATA CURRENTLY NOT AVAILABLE*

Table 1. Inventory of Dams on the Exeter and Lamprey Rivers

RIVER	DAM NAME	COUNTY	TOWN	TYPE	STATUS	STATUS DATE	NH DAM ID	NATIONAL DAM ID	LENGTH	HEIGHT	BUILT	REBUILT	DAM LOCATION		River km
													LONG	LAT	
EXETER RIVER	EXETER RIVER DAM I	ROCKINGHAM	EXETER	CONCRETE	REMOVED	2016	82.01	NH00304	140	15	1914	1968	-70.944444	42.981111	10.3
	PICKPOCKET DAM	ROCKINGHAM	BRENTWOOD	CONCRETE	ACTIVE	2004	29.07	NH00294	230	15	1920		-71.001667	42.969444	22.4
	EXETER RIVER CRIB DAM	ROCKINGHAM	BRENTWOOD	TIMBERCOMB	RUINS	1935	29.06		110	12			-71.036944	42.98417	27.6
	JOHANON DAM	ROCKINGHAM	BRENTWOOD	STONE/EARTH	RUINS	1935	29.05		60	10			-71.065	42.97806	31.5
	CRAWLEY FALLS DAM	ROCKINGHAM	BRENTWOOD	TIMBERCOMB	RUINS	1972	29.04		140	9			-71.072778	42.97778	32.2
	ROWE DAM	ROCKINGHAM	BRENTWOOD	TIMBERCOMB	RUINS	1935	29.03		80	8			-71.073889	42.97639	32.5
	EXETER RIVER DAM	ROCKINGHAM	BRENTWOOD	CONCRETE	ACTIVE	2007	29.01	NH00293	115	15	1900		-71.085833	42.96917	34.0
	SCRIBNER ROAD DAM	ROCKINGHAM	FREMONT	CONCRETE	ACTIVE	2003	89.02	NH01050	150	12	1963		-71.134167	42.97694	40.7
	EXETER RIVER	ROCKINGHAM	FREMONT	TIMBERCOMB	ACTIVE	1972	89.01	NH01876	70	7			-71.146389	42.99167	43.0
	FORDWAY BROOK DAM	ROCKINGHAM	RAYMOND	TIMBERCOMB	RUINS	0	201.1		0	1			-71.195	42.99056	49.9
	EXETER RIVER IV DAM	ROCKINGHAM	SANDOWN	STONE/EARTH	RUINS	1935	212.04		125	12			-71.166667	42.94861	62.7
	DENSEN POND DAM	ROCKINGHAM	SANDOWN	EARTH	ACTIVE	1996	212.03	NH03047	200	10	PRE 1935		-71.1725	42.94806	63.3
	EXETER RIVER II DAM	ROCKINGHAM	SANDOWN	STONE/EARTH	BREACHED	1982	212.02		100	10			-71.176667	42.94667	63.7
	EXETER RIVER I DAM	ROCKINGHAM	SANDOWN	EARTH/STONE	BREACHED	1949	212.01		0	5			-71.209722	42.93667	68.3
DEEP HOLE POND DAM	ROCKINGHAM	CHESTER	EARTH	ACTIVE	2006	44.08	NH01003	150	15	1974		-71.2375	42.94111	71.2	
LAMPREY RIVER	MACALLEN DAM	ROCKINGHAM	NEWMARKET	CONCRETE	ACTIVE	2003	177.01	NH00365	150	27	1887		-70.934722	43.08111	3.0
	WISWALL DAM	STRAFFORD	DURHAM	CONCRETE	ACTIVE	2005	71.04	NH00441	200	18	1911		-70.963333	43.10389	8.6
	WADLEIGH FALLS	STRAFFORD	LEE	CONCRETE	BREACHED	1997	135.02		300	13			-71.006667	43.09139	21.4
	LAMPREY RIVER POND DAM	ROCKINGHAM	RAYMOND		RUINS	1935	201.07		0	0			-71.167778	43.02833	48.1
	LAMPREY RIVER I DAM	ROCKINGHAM	RAYMOND		RUINS	1935	201.06		0	0			-71.2025	43.04139	54.0
	LAMPREY RIVER HILL DAM	ROCKINGHAM	DEERFIELD	STONE/EARTH	RUINS	1935	61.06		0	5			-71.230278	43.0825	61.5
	LAMPREY RIVER V DAM	ROCKINGHAM	DEERFIELD	STONE/EARTH	EXEMPT	1979	61.08	NH01656	125	2			-71.236944	43.09	62.6
	LAMPREY RIVER ROBINSON DAM	ROCKINGHAM	DEERFIELD		RUINS	0	61.05		0	0			-71.229167	43.13056	68.5
	LAMPREY RIVER DOUBLE WALL DAM	ROCKINGHAM	DEERFIELD	STONE/EARTH	RUINS	1934	61.04		0	12			-71.231111	43.14083	70.1
	LAMPREY RIVER MILL DAM	ROCKINGHAM	DEERFIELD	STONE/EARTH	RUINS	1934	61.03		0	15			-71.232222	43.14167	70.2
FREESES POND DAM	ROCKINGHAM	DEERFIELD	CONCRETE	ACTIVE	2001	61.02	NH00472	150	12.5	1987		-71.234444	43.15028	71.4	

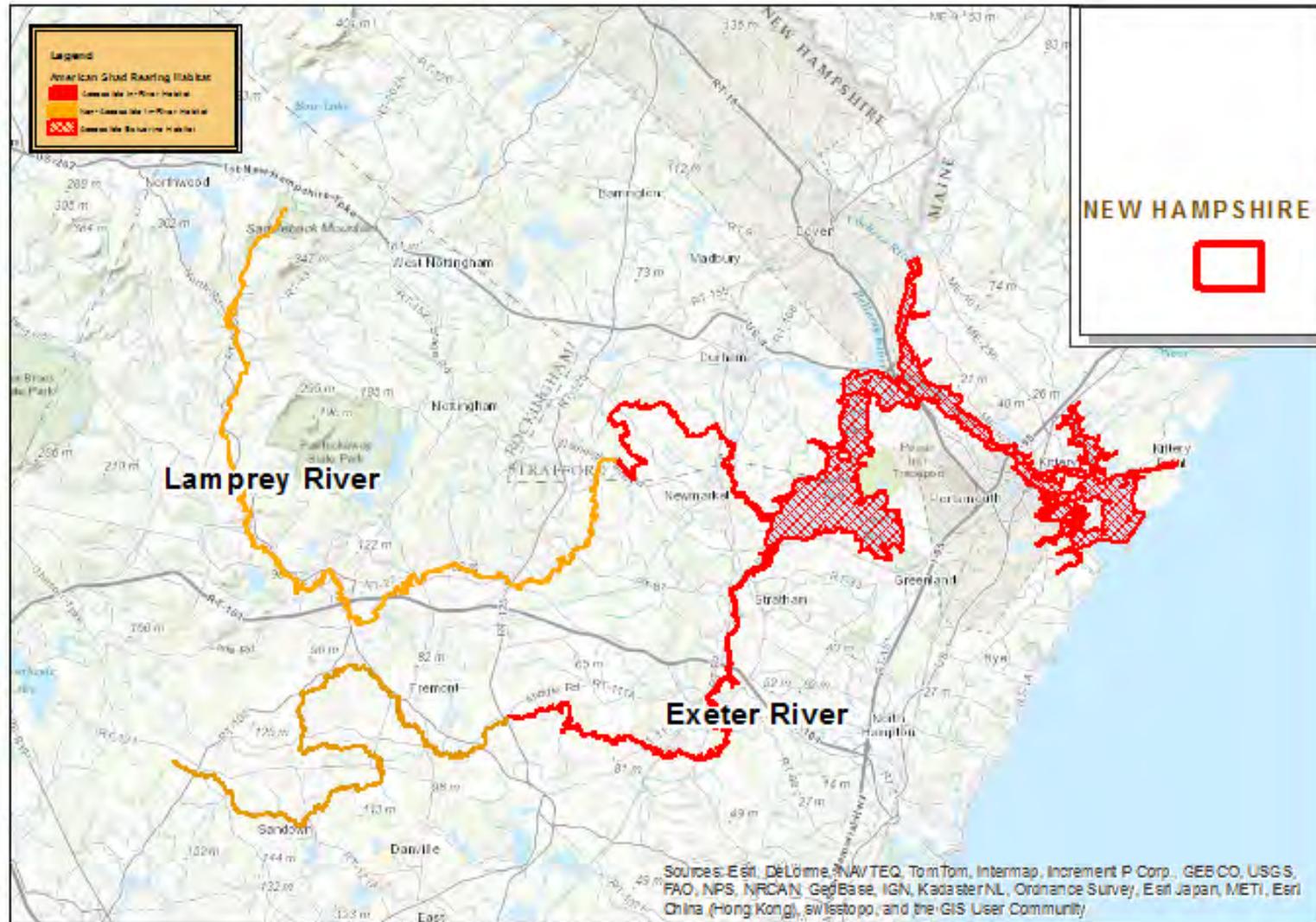
Accessible Spawning Habitat and Barrier Inventory of Exeter and Lamprey Rivers, NH

American Shad Habitat Plan



Rearing Habitat for American Shad in the Exeter and Lamprey Rivers, NH

American Shad Habitat Plan





*Larry Hogan, Governor
Boyd Rutherford, Lt. Governor
Jeannie Haddaway-Riccio, Secretary*

Maryland's American Shad Habitat Plan

Submitted to the
Atlantic States Marine Fisheries Commission

Prepared by
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December 21, 2020

Maryland's American Shad Habitat Plan

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Thank you to Margaret McGinty and Jim Uphoff of the Maryland Department of Natural Resources Fisheries Habitat and Ecosystem Program for providing expertise on habitat issues facing American shad and for their assistance with habitat delineation.

Habitat Assessment

Spawning and rearing habitat was determined for most major river systems under Maryland jurisdiction with a known history of American shad (*Alosa sapidissima*) spawning (Tables 1 & 2). Spawning habitat was delineated using a combination of empirical observations during scientific surveys, spring salinity regimes (MDNR, 2020), historical fishery reports, and the Chesapeake Fish Passage Prioritization tool (Martin, 2019) (Figures 1-9). Rearing habitat was delineated using a combination of empirical observations during scientific surveys and juvenile American shad distribution estimates formulated by the MDNR Fisheries Habitat and Ecosystem Program (FHEP) (Figure 10; Uphoff et al., 2017). Rearing habitat was further categorized according to average bottom salinity (1998-2003) into preferred (0-4 ppt), acceptable (4-7 ppt), and marginal (7-13 ppt) habitat (Uphoff et al., 2017). Salinity preferences were determined using frequency distributions of young-of-year American shad captured during the MDNR Estuarine Juvenile Finfish Survey by salinity (Uphoff et al., 2017).

Most rivers were assessed individually, with the only exception being the complex of waterways that feed into the upper Chesapeake Bay, which was combined into single estimates of spawning and rearing habitat. This was done in accordance with the 2020 benchmark stock assessment which identified this collection of rivers as a single stock unit (ASMFC, 2020). These rivers include Chesapeake Bay tributaries such as the Susquehanna, North East, Elk, Bohemia, and Sassafras Rivers. While spawning can occur in any of these locations, the Susquehanna River, Susquehanna Flats, and North East River are host to the majority of American shad spawning activity in the Upper Bay. While this may be partially a function of the currently depressed stock status, historical fishery landings suggest that even in times of greater abundance, spawning runs of American shad were minimal in the Elk and Sassafras Rivers relative to the Susquehanna River and Flats (Stevenson, 1899; Mansueti and Kolb, 1953; Walburg and Nichols, 1967). Stevenson (1899) even suggested that American shad often bypassed small rivers such as the Sassafras due to their attraction to the strong freshwater flow coming from the Susquehanna River.

Habitat statistics as presented in this document should be interpreted as accessible habitat rather than suitable habitat; some historically productive and accessible rivers have been significantly degraded by urban and agricultural development, leading to less than favorable environmental conditions for American shad spawning. Such rivers include the Patapsco, Patuxent, and Wicomico. The impacts of these issues on habitat quantity are variable from year to year and difficult to assess. Thus, they are addressed in the 'Threats' section of this habitat plan. Nevertheless, most dams or other anthropogenic barriers in Maryland are located far

enough upstream so as not to impact American shad use of habitat. Habitat upstream of dams with fish passage facilities was considered accessible if American shad have been documented successfully using the fish ladder/lift.

Threats Assessment

Threat: Barriers to Migration

An inventory of dams that may be encountered by American shad are included in Table 3. As stated previously, most of the dams in Maryland are located far enough up the watershed so as to not impact American shad habitat use. The primary exception to this is Conowingo Dam on the Susquehanna River, which restricts access to a substantial amount of upriver spawning and rearing habitat. Only 4.38% of historical American shad habitat in the Susquehanna River drainage remains unobstructed (ASMFC, 2020). Further complicating habitat use in the Susquehanna River basin are three other major hydropower dams (Holtwood, Safe Harbor, and York Haven Dams) upstream of Conowingo, all located in Pennsylvania. The majority of suitable spawning habitat lies beyond York Haven, the most upstream of these dams. While fish passage facilities exist at all of these hydropower projects, upstream passage efficiency is poor. Mean combined upstream passage efficiency of adult American shad from all four main stem dams from 1997-2010 was estimated as 2% (Normandeau and Gomez & Sullivan, 2012a). Upstream passage efficiency of adult American shad at Conowingo Dam alone is estimated as 25.8% (Normandeau and Gomez & Sullivan, 2012b).

Despite the presence of volitional fish passage at Conowingo Dam, significant upstream passage delays are likely. Increased residence time in the dam tailrace results in greater energy expenditure during an already metabolically-costly migration. Consequences of upstream passage delays, in conjunction with poor upstream passage efficiency and downstream migration mortality, include reduced fecundity, spatial extent of spawning, spawning success, spawner abundance, and percentage of repeat spawners (Stich et al., 2018; Castro-Santos and Letcher, 2010).

As a result significantly reduced habitat accessibility, the abundance of American shad spawning in the Susquehanna River is likely near historic lows (Bourdon and Jarzynski, 2019). However, the pending relicensing of Conowingo Dam, along with ongoing upstream and downstream fish passage improvements at dams in the Pennsylvania portion of the Susquehanna, should improve riverine migratory conditions for American shad and other diadromous species.

Updating upstream and downstream passage requirements to ecologically-informed levels at major hydropower dams is essential for the restoration of American shad. In times past, losses due to poor adult downstream survival through the Susquehanna River dams essentially replaced losses due to fisheries (Sadzinski and Uphoff, pers. comm). Substantial work to improve downstream adult survival is ongoing and includes solutions such as installation of Kaplan turbines (more fish-friendly than traditional Francis turbines), seasonal alterations to turbine and spillway operations, and creation of alternative routes of downstream passage. At

smaller dams throughout the state, the MDNR Fish Passage Program (FPP) prioritizes dam removal over fish passage facility installation.

The failure of fish passage facilities to restore alosine fish populations is not unique to the Susquehanna and is a ubiquitous problem throughout the range of the American shad (Brown et al., 2012). The 2020 ASMFC American shad stock assessment report highlights issues with lack of evaluation and performance standards at fish passage facilities (ASMFC, 2020). Many of these structures are decades old and their designs and operations are largely ineffective; they cannot reasonably be expected to achieve management and restoration goals without significant changes. The assessment report also provides a quantitative modeling approach examining shad habitat and passage barriers, and the need to address status quo fish passage performance. The impacts of these barriers and status quo passage are described and also modeled as effects on spawner population size under three scenarios: 1) no barriers, 2) first barrier with no passage, and 3) realistic fish passage performance measures applied to barriers (e.g., upstream passage efficiency of 50%).

The assessment report used standardized data and modelling approaches that quantified the impacts of barriers and fish passage as significant in all three management areas examined based on American shad life history and habitat (New England, Mid-Atlantic, and South Atlantic). Overall, dams completely or partly block nearly 40% of the total habitat once used by American Shad. The model results of the “no barriers” scenario yielded an estimated spawner production potential 1.7 times greater than that yielded by the scenario assuming no passage at the first barrier: 72.8 million versus 42.8 million fish. The results of the third model scenario, which applies “realistic” (i.e., current) fish passage efficiencies, resulted in a gain of less than 3 million fish. Losses in spawner production potential were significant in each state and region. The assessment report provides a strong justification for the need and benefits of requiring improved fish passage performance measures. Additionally, meeting such improved passage performance standards is now an achievable goal given the current state of knowledge on fish behavior, swimming performance, and fish passage engineering expertise.

Recommended Action 1 (See Task A1 in SRAFRFC Restoration Plan): Develop and implement upstream passage plans and performance measures at the Conowingo hydroelectric dam to ensure that the facility passes at least 85 percent of the adult American shad reaching the tailrace. Incorporate upstream passage plans and evaluation requirements in FERC licenses. Recommend or conduct evaluation studies as necessary. Require additional fish passage capacity, as needed, to meet fish passage targets. Report fish passage results annually.

Agencies with Regulatory Authority: SRAFRFC (made up of MDNR, PFBC, PADEP, SRBC, NYDEC, and USFWS members), MDE, and FERC.

Goal/Target: Goals listed in the recommended action are to be met in conjunction with FERC relicensing and compliance.

Progress: In April 2016, Exelon Generation LLC entered a settlement agreement with the USFWS regarding the fish passage prescription for Conowingo dam. This fish passage settlement agreement outlines the steps that will be taken to achieve the required upstream passage efficiency. The MDE and Exelon Generation LLC reached a settlement agreement in Fall 2019 regarding the water quality certification issued in 2018 by

Maryland under Section 401 of the Clean Water Act. Relicensure of Conowingo dam, and thus the implementation of upstream passage requirements, is still pending FERC approval of both the fish passage and water quality settlement agreements.

Cost: SRAFRFC member agencies are responsible for overhead. The dam owner's cost is dependent on the level of fishway improvement required to meet target levels.

Timeline: Action goals are to be accomplished upon completion of FERC relicensing.

Recommended Action 2 (See Task A2 in SRAFRFC Restoration Plan): Develop and implement downstream passage plans and measures for adult alosine species at the Conowingo hydroelectric dam to ensure at least 80 percent survival. Incorporate adult downstream passage plan and evaluation requirements in FERC licenses.

Agencies with Regulatory Authority: SRAFRFC (made up of MDNR, PFBC, PADEP, SRBC, NYDEC, and USFWS members), and FERC.

Goal/Target: Goals listed in the recommended action are to be met in conjunction with FERC relicensing and compliance.

Progress: In April 2016, Exelon Generation LLC entered a settlement agreement with the USFWS regarding the fish passage prescription for Conowingo dam. This fish passage settlement agreement outlines the steps that will be taken to achieve the required downstream passage efficiency. The MDE and Exelon Generation LLC reached a settlement agreement in Fall 2019 regarding the water quality certification issued in 2018 by Maryland under Section 401 of the Clean Water Act. Relicensure of Conowingo dam, and thus the implementation of downstream passage requirements, is still pending FERC approval of both the fish passage and water quality settlement agreements.

Cost: SRAFRFC member agencies are responsible for overhead. The dam owner's cost is dependent on the level of modification required to meet target levels.

Timeline: Action goals are to be accomplished upon completion of FERC relicensing.

Recommended Action 3 (See Task A3 in SRAFRFC Restoration Plan): Develop and implement juvenile downstream passage plan and performance measures at the Conowingo hydroelectric dam to ensure 95 percent survival of juvenile alosine species at this facility. Incorporate juvenile downstream passage plan and evaluation requirements in FERC licenses. Include operational measures at the hydroelectric dam as needed to enhance downstream passage survival of juvenile alosine species.

Agencies with Regulatory Authority: SRAFRFC (made up of MDNR, PFBC, PADEP, SRBC, NYDEC, and USFWS members), and FERC.

Goal/Target: Goals listed in the recommended action are to be met in conjunction with FERC relicensing and compliance.

Progress: In April 2016, Exelon Generation LLC entered a settlement agreement with the USFWS regarding the fish passage prescription for Conowingo dam. This fish passage settlement agreement outlines the steps that will be taken to achieve the required downstream passage efficiency. The MDE and Exelon Generation LLC reached a settlement agreement in Fall 2019 regarding the water quality certification issued in 2018 by Maryland under Section 401 of the Clean Water Act. Relicensure of Conowingo dam,

and thus the implementation of downstream passage requirements, is still pending FERC approval of both the fish passage and water quality settlement agreements.

Cost: SRAFRFC member agencies are responsible for overhead. The dam owner's cost is dependent on the level of modification required to meet target levels.

Timeline: Action goals are to be accomplished upon completion of FERC relicensing.

Recommended Action 4 (See Task A9 in SRAFRFC Restoration Plan): Minimize delays at the Conowingo hydroelectric dam to foster adult spawning fish migration to the upper limits of historical spawning habitat in the watershed.

Agencies with Regulatory Authority: SRAFRFC (made up of MDNR, PFBC, PADEP, SRBC, NYDEC, and USFWS members), and FERC.

Goal/Target: Goals listed in the recommended action are to be met in conjunction with FERC relicensing and compliance.

Progress: In April 2016, Exelon Generation LLC entered a settlement agreement with the USFWS regarding the fish passage prescription for Conowingo dam. This fish passage settlement agreement outlines the steps that will be taken to ensure the timely upstream passage of American shad. The MDE and Exelon Generation LLC reached a settlement agreement in Fall 2019 regarding the water quality certification issued in 2018 by Maryland under Section 401 of the Clean Water Act. Relicensure of Conowingo dam, and thus the implementation of upstream passage requirements, is still pending FERC approval of both the fish passage and water quality settlement agreements.

Cost: SRAFRFC member agencies are responsible for overhead. The dam owner's cost is dependent on the level of fishway improvement required to meet target levels.

Timeline: Action goals are to be accomplished upon completion of FERC relicensing.

Recommended Action 5: To continue to provide for fish passage at dams, and remove stream blockages wherever necessary to restore passage for migratory fishes to historical spawning grounds.

Agencies with Regulatory Authority: MDNR, in cooperation with the Chesapeake Bay Program, Pennsylvania, Virginia, and the District of Columbia.

Goal/Target: MDNR has been part of the Chesapeake Bay Agreement (to provide fish passage at dams and remove stream blockages) since 1987. After exceeding the initial goal by restoring access to 1,838 miles of aquatic habitat by 2005, the states decided to expand the goal to 3,500 miles by 2025. As of 2017, this goal was surpassed with a cumulative restoration total of 3,746 miles. The Chesapeake Bay Agreement prioritizes dam removals over the installation of fish ladders.

Progress: To date, the MDNR FPP has completed 78 projects, reopening a total 454.2 miles of upstream aquatic habitat (in Maryland). The FPP is currently involved in planning for the removal of three dams that American shad may encounter including Van Bibber Dam (Bush River), Atkisson Dam (Bush River), and Ft. Meade Dam (Patuxent River). Additionally, there are plans to improve natural bypass conditions around the Elkton Dam (Elk River).

Cost: Total cost and responsible agencies depend on the project. In Maryland, participants include but are not limited to MDNR, American Rivers, NFWF, NOAA, CBP, EBTJV, and the USFWS.

Timeline: Between 1989 and 2011, 2,510 miles of aquatic habitat were re-opened to migratory fish in the Chesapeake Bay watershed. In accordance with the Chesapeake Bay Watershed Agreement, the CBP adopted a goal of re-opening an additional 1,000 miles from the 2011 baseline. As of 2017, this goal was exceeded with access to 1,236 miles of aquatic habitat being restored.

Threat: Water Withdrawals

Power plant cooling water intakes currently account for over 91% of permitted surface water withdrawals by volume in Maryland. Cooling water intakes in excess of two-million gallons per day are regulated by the EPA National Pollutant Discharge Elimination System (NPDES). An inventory of power plants that currently withdraw water from Maryland's portion Chesapeake basin within American shad habitat are provided in Table 4. No American shad have been documented in either entrainment or impingement studies conducted at these facilities. However, other alosids such alewife and blueback herring have been infrequently documented, which would suggest that juvenile American shad could be subject to entrainment or impingement in small numbers.

The Maryland Department of the Environment (MDE) regulates surface water intake requirements for power plants drawing under two-million gallons per day as well as intakes for most other purposes. Any operation withdrawing in excess of 10,000 gallons of surface water must obtain a water appropriation and use permit from MDE. Consultation with the MDNR environmental review team is conducted for all new surface water withdrawals. Concurrent with MDNR recommendations, MDE requires a 0.5 ft/second intake velocity and one millimeter screening on most surface water intakes. While alosine fish habitat is considered during the permitting process, most water intakes do not require monitoring for impingement or entrainment of aquatic organisms.

Recommended Action: Reduce impingement and entrainment of American shad within the Maryland portion of the Chesapeake basin.

Agencies with Regulatory Authority: EPA, FERC, MDE, MDNR

Goal/Target: NA

Progress: All power plants drawing in excess of two-million gallons of surface water per day within the range of American shad have conducted impingement monitoring, and all but one (Wheelabrator) have conducted entrainment monitoring. No American shad were identified by these studies. MDE requires a 0.5 ft/second intake velocity and one millimeter screening to reduce entrainment and impingement of aquatic organisms. Additionally, the MDNR Power Plant Research Program initiated the Smart Siting Project in 1996 to provide guidance to power plant developers regarding environmental concerns and to identify areas most favorable for power plant development.

Cost: NA

Timeline: NA

Recommended Action: Maintain surface water flow velocity and volume sufficient for American shad spawning and rearing.

Agencies with Regulatory Authority: EPA, FERC, MDE, MDNR

Goal/Target: NA

Progress: The MDNR Environmental Review Team and MDE consider the impacts of proposed surface water withdrawals on flow regimes to maintain appropriate conditions for aquatic life.

Cost: NA

Timeline: NA

Threat: Channelization and dredging

There is no information available regarding the impacts of dredging projects on American shad in Maryland, though fish habitat may be given consideration during the permitting process. Alteration of substrate characteristics could influence spawning behavior, though American shad may not be as substrate specific as some other alosine species (Krauthamer and Richkus, 1987; Bilkovic et al., 2002). Disturbance of the benthos may also temporarily decrease water quality and suspend contaminants in the water column, especially in urban or industrial areas.

The largest dredging projects in Maryland are managed by the Maryland Department of Transportation's Maryland Port Authority (MPA) and are operated to maintain shipping channels connecting the main stem of the Chesapeake Bay and the Patapsco River (location of the Port of Baltimore). An average of 4.7 million cubic yards of sediment is dredged every year to maintain approximately 150 nautical miles of shipping channels. Most of the MPA authorized dredging occurs outside of the preferred spawning or rearing habitat for American shad, with the exception being the Upper Bay area where a 35-40' channel system is maintained to connect the Port of Baltimore to the Chesapeake and Delaware canal. Smaller dredging projects are permitted through MDE.

The MPA also manages the Dredged Material Management Program to find environmentally responsible solutions for the usage of dredged material. Much of this material is used for habitat restoration on eroding Chesapeake Bay islands and marshes. Active dredged material placements sites include Poplar Island, Masonville, and Cox Creek. The MDE oversees the proper use of dredged material, including the enforcement of sediment characterization requirements that ensure that contaminated dredged material does not negatively impact aquatic communities.

Recommended Action: Consider American shad habitat during the permitting process for dredging and dredged material placement projects.

Agencies with Regulatory Authority: MDOT, MPA, MDE

Goal/Target: NA

Progress: MDE may consult the MDNR Environmental Review Team during the permitting process for dredging projects. MPA and MDE are both involved in site selection for the reuse of dredged material. MDE considers toxicity thresholds for aquatic communities during sediment characterization studies required before the placement of

dredged material. To offset the impacts of dredging, the MPA funded shad and river herring restoration in the Patapsco River through fish production, stocking, and assessment.

Cost: NA

Timeline: NA

Threat: Land Use

Land use has a profound impact on water quality and fisheries health within Maryland. Many fish stocks, including American shad, have experienced significant declines due to uninformed land use decisions among other factors. One of the earliest realized effects of poorly regulated land use on fisheries in Maryland was the siltation of anadromous fish spawning grounds (Mansueti and Kolb, 1953). While American shad spawning may not be as substrate dependent as some other alosines (Krauthamer and Richkus, 1987; Bilkovic et al., 2002), siltation of spawning grounds contributed to American shad declines in Maryland in the early 20th century (Mansueti and Kolb, 1953; Klauda et al., 1991a). The topography of watersheds on the western shore of the Chesapeake Bay may promote rapid runoff of surface water into rivers and streams, especially when natural land cover has been disturbed. The American shad spawning grounds of one such watershed, the Patuxent, suffered under heavy siltation associated with gravel mining and tobacco farming in the early to mid-1900's (Mansueti and Kolb, 1953). The degree of siltation in most eastern shore rivers during that time was likely not as severe, despite the prevalence of agriculture; the flat land does not promote rapid runoff of surface water into rivers (Mansueti and Kolb, 1953). Siltation from flood stages at Conowingo Dam likely restricted spawning habitat on the Susquehanna Flats in the Upper Bay soon after dam construction in 1928. Fishermen in the region reported that they could no longer operate drift nets over the Susquehanna Flats due to the degree of siltation and sunken logs deposited from upstream (Mansueti and Kolb, 1953).

Modern best management practices currently prevent siltation from occurring on such large scales, but localized siltation events still occur. Streambank erosion in headwater streams and the discharge of legacy sediments stored in stream valleys continue to impact aquatic ecosystem health (Noe et al., 2020). Furthermore, sediment retention in Conowingo Reservoir is at maximum capacity; the discharge of water from the dam, particularly at flood stages, is now associated with the release of sediment and associated nutrients, heavy metals, and other pollutants that have accumulated behind the dam over the last century (Palinkas et al., 2019).

Few sampling programs have successfully monitored the impact of watershed development on American shad specifically. However, the MDNR Fisheries Habitat and Ecosystem Program (FHEP) assesses alosine fish habitat use across a gradient of development to explore the effects of urbanization on spawning habitat (Uphoff et al., 2019). The critical egg and larvae life stages are targeted by this survey. While no American have been detected to date, they are expected to demonstrate similar responses to development as the positively detected alosine species (river herring and hickory shad); American shad eggs and larvae have similar tolerances as other Maryland alosines for salinity, temperature, turbidity, pH, dissolved oxygen, and suspended solids (Klauda et al., 1991a; Klauda et al., 1991b).

The level of development in a watershed is often measured using a metric of impervious surface coverage (Topolski, 2015; Uphoff et al., 2019). Increases in impervious surfaces are associated with greater surface water runoff into surrounding waterways and declining water quality. This runoff acts as a vector for excess nitrogen, phosphorus, and contaminants such as heavy metals, dissolved minerals, and PAHs. The FHEP demonstrated that the presence of alosine eggs and larvae is negatively correlated with both the level of development and conductivity, a commonly used measure of water quality associated with development (Uphoff et al., 2019). These findings suggest that increases in urban and suburban development are causative factors of the deterioration of alosine spawning habitat and overall spawning success. Rivers impaired by high levels of development are unlikely to produce notable quantities of juvenile American shad, even if the abundance of spawners is sufficient (Uphoff et al., 2018).

Excess nutrient loading due to land development also has a significant influence on dissolved oxygen (DO) availability. Bottom water hypoxia significantly reduces available habitat for most aquatic species and is an annually observed phenomenon throughout most of the Chesapeake basin during the summer (Rabalais and Turner, 2001; Breitburg et al., 2003; D’Elia et al., 2003). Nutrient runoff from agricultural lands has often been implicated as a primary driver of seasonal hypoxic events in the Chesapeake Bay (Kemp et al., 2005; Brush, 2009). However, other types of human-altered land coverage negatively influence DO availability as well. Uphoff et al. (2011) demonstrated significant relationships between various modes of watershed land use, summer DO, and presence of finfish and shellfish indicator species in various Maryland sub-estuaries. Percent impervious surface coverage was used as an indicator of urban development intensity. Bottom DO was negatively influenced by impervious surface coverage while surface DO exhibited no relationship to impervious surface coverage. Surprisingly, mean bottom DO was positively correlated with the percentage of agricultural land cover. No matter the cause, summer hypoxia influences the amount and quality of rearing habitat available to American shad. However, the extent of summer hypoxia usually does not impact freshwater and oligohaline waters that compose the preferred rearing habitat identified by the FHEP (Figure 10; Uphoff et al., 2017). The mesohaline waters characteristic of acceptable and marginal rearing habitat are much more susceptible to hypoxic conditions (Figure 10; Uphoff et al., 2017). Exposure to hypoxic waters may cause direct mortality of finfish, or increase mortality indirectly through density-dependent interactions with predators, impaired growth, or suppressed immune responses among other factors (Breitburg, 2002; Breitburg et al., 2003, 2009).

Fisheries managers do not have authority to manage land use and are limited to managing the harvest of fishes that may be threatened. The FHEP works to tie land use and fisheries management together; this program’s research supports a 10% impervious surface threshold as the ‘tipping point’ beyond which little success is expected in maintaining sustainable fisheries. A characterization of estimated impervious surface coverage, along with select other watershed characteristics, is provided for spawning and rearing rivers in Table 5. American shad fisheries are closed in Maryland, but an explanation of Maryland’s watershed fishery management priorities are as follows (Figure 11):

- Conserve - areas with less than 5% impervious surface; recommend harvest restrictions and stocking for effective fisheries management and watershed conservation for sound land management.
- Revitalize – areas with 5-10% impervious surface; recommend options to decrease harvest and increase stocking to compensate for effective fishery management, and conserve and revitalize watershed for sound land management.
- Re-engineer – areas with 10-15% impervious surface; fisheries are highly variable; traditional fishery management tools are not reliable. Recommend conserving and reconstructing degraded watershed for land management – typically re-engineering will address nutrient reductions for larger scale TMDL, but this is not expected to have local biological lift.
- 15% impervious – from a fishery management point of view, investments to enhance large scale fisheries are not expected to be effective; local re-engineering can address localized habitat stability needs, but are not expected to provide additional ecological lift.

Recommended Action: To continue to promote the conservation and revitalization of watersheds, especially in areas vulnerable to growth. Conserving watersheds at a target level of development is ideal [0.27 structures per hectare (C/ha) or 5% impervious surface cover; Uphoff et al. 2018]. Once above this level of development, revitalization and reconstruction could consist of measures such as road salt management, stemming leaks in sewage pipes, improving septic systems, stormwater retrofits, stream rehabilitation, replenishment of riparian buffers, creation of wetlands, planting upland forests, and “daylighting” of buried streams (Uphoff et al. 2018). Other effects that may exacerbate development related habitat stressors (i.e., climate change) should also be considered.

Agencies with Regulatory Authority: The planning authority for each county is typically the local government, with the Maryland Department of Planning serving in an advisory capacity.

Goal/Target: Maryland does not have measureable goals for protecting American shad from land use impacts; fisheries managers can only influence land use in an advisory capacity. If the fishery reopens, management strategies may be adapted to the level of watershed development, as advised by the FHEP.

Progress: Maryland instituted a moratorium on American shad fisheries in 1980 to reduce stress on the depleted American shad stock. Many state and grassroots organizations work to preserve as much of the remaining natural land in Maryland as possible. The FHEP acts in an advisory capacity to local governments to promote natural land conservation and more responsible development practices.

Cost: NA

Timeline: NA

Threat: Climate Change Assessment

Diadromous fish, including American shad, are among the most vulnerable aquatic species to the effects of climate change (Hare et al., 2016). Of 36 Northeast U.S. continental shelf fish species analyzed in a spatial distribution study, American shad exhibited one of the

greatest poleward shifts in distribution during their marine residence from 1968-2007 (Nye et al., 2009). However, given the natal homing behavior exhibited by American shad, a northward shift of the same magnitude is unlikely for the spawning range, though there is greater uncertainty surrounding this prediction (Hare et al., 2016). Changes in stock structure due to climate change should be given greater consideration during future diadromous fish stock assessments (Nye et al., 2009).

American shad migration and spawning are heavily influenced by water temperature. Models focusing on American shad in the Hudson River, New York predict that by the 2090's, the onset of spawning will begin 15 days earlier and the duration of spawning will be truncated by 4 days (Nack et al., 2019). In Maryland, peak spawning time is mid-April through early June, with temperatures ranging from 55°F to 68°F. In addition to anticipated changes in spawning time and duration, spring temperature increases may lead to a mismatch between larval rearing phases and phytoplankton blooms required to support them (Boesch, 2008). The migration of juvenile alosine fish, including American shad, to the ocean in the fall is triggered by decreasing water temperature, and may be delayed due to warmer fall temperatures (Kane, 2013).

Maryland lies in the middle of the coastwide range of American shad, which minimizes the potential for distributional shifts of this species in the state. However, the impacts of climate change on American shad may manifest themselves in more indirect ways. The combined effects of temperature change, sea level rise, and changes to precipitation patterns will likely exacerbate the impacts of other threats described in this document including development and poor water quality (Boesch, 2008). Notably, temperature, freshwater flow, and sea level rise predictions specific to the Chesapeake Bay are expected to decrease dissolved oxygen availability in the basin despite substantial efforts to reduce nutrient inputs throughout the watershed (Irby et al., 2018). American shad, especially larvae and juveniles, may also experience stress due to changes in the abundance and distribution of food resources (Boesch, 2008); distributional shifts of other species in response to climate change may also increase competition for these resources and expose American shad to novel predatory interactions.

Recommended Action: Incorporate the effects of climate change on American shad migration, spawning, distribution, habitat, and trophic interactions into decisions impacting the management of anadromous fish stocks and habitat.

Agencies with Regulatory Authority: ASMFC, MAFMC, NMFS, MDNR

Goal/Target: NA

Progress: The Maryland Climate Change Commission advises the Governor and General Assembly “on ways to mitigate the causes of, prepare for, and adapt to the consequences of climate change.” While this effort does not directly address the effects of climate change on American shad, it does promote ecosystem resiliency efforts which indirectly work to conserve anadromous fish habitat.

Cost: NA

Timeline: NA

Threat: Competition and Predation

American shad, particularly juveniles and sub-adults, are forage for a wide variety of species. Given their great historic abundance, young-of-year American shad were likely a common prey item for most piscivorous or generalist fish during the summer and fall in tidal Maryland waters. Presently, few, if any, predators have a stronger influence on American shad population dynamics than the striped bass (*Morone saxatilis*). Predation by striped bass has been identified as a driver of American shad population density in the Albemarle Sound (Tuomikoski et al., 2008). In the Connecticut River, predation by an increasing abundance of striped bass was implicated in the drastic decline of American shad in the 1990's (Savoy and Crecco, 2004). Being the primary spawning and nursery area for the coastal migratory stock, the Chesapeake Bay is home to an abundance of striped bass; annual fluctuations in the abundance of resident, pre-migratory striped bass likely exert a strong effect on successful recruitment of juvenile American shad to the offshore migratory stock.

The proliferation of invasive predators in Maryland waters is of particular concern to all alosine species. Blue catfish (*Ictalurus furcatus*), flathead catfish (*Pylodictis olivaris*), and Northern snakehead (*Channa argus*) are all recently introduced predators with the potential to impact American shad restoration efforts. Schmitt et al. (2017) analyzed prey selectivity of both flathead and blue catfish in the James River, a Virginia tributary of the Chesapeake Bay, during March-May of 2014 and 2015. They found that flathead catfish were highly piscivorous and selectively preyed on adult American shad relative to other available forage. Blue catfish had broad, omnivorous diets but became more piscivorous with age; predation upon adult American shad was documented, but there was no evidence for selectivity of American shad over other available forage. The impacts of Northern snakehead upon American shad are not well understood, but predation, especially upon juveniles, is likely (Fofonoff et al., 2003).

Migration obstacles such as dams that facilitate dense aggregations of American shad are likely to increase their susceptibility to predation by these species (Schmitt et al., 2017). In Maryland, this is mainly a concern at Conowingo dam, where high numbers of American shad congregate near the entrances of fish lifts. Flathead catfish, blue catfish, and Northern snakehead are also abundant in the Conowingo dam tailrace, so predation upon American shad is expected.

Flathead catfish are almost entirely restricted to freshwater habitats. Within Maryland, their most dense populations are located in the Susquehanna River and the non-tidal Potomac River, though they have also been documented in the Upper Chesapeake Bay, the Elk River, and the Sassafra River. Northern snakehead and especially blue catfish have proven themselves more adaptable to the primarily brackish waters of the Chesapeake basin and are now found in almost all Maryland tributaries. Therefore, the potential for the interaction of these species with both adult and juvenile American shad is high. Despite this, American shad population declines in response to the proliferation of invasive predators has not been documented in Maryland. In the Potomac River, the epicenter of both the blue catfish and Northern snakehead invasions in the state, relative abundance of both juvenile and adult American shad continues to increase (Bourdon and Jarzynski, 2019). Further work is needed to fully understand the impacts that this suite of invasive predators may have on the recovery of American shad in Maryland waters.

Long established non-native predators such as the channel catfish (*Ictalurus punctatus*), smallmouth bass (*Micropterus dolomieu*), and largemouth bass (*Micropterus salmoides*) may also impede the recovery of alosine fish populations. Given the long history of these species in the Chesapeake basin, their impacts on American shad populations are unknown. However, all have been documented consuming American shad (Fofonoff et al., 2003). Most notably, juvenile smallmouth bass were the dominant predator of recently stocked larval American shad in the Susquehanna River (Johnson and Dropkin, 1992).

While many native species compete for food resources with American shad, the gizzard shad (*Dorosoma cepedianum*) presents particularly strong challenges for American shad recovery via non-predatory, density-dependent effects. Stocks of many native fish species declined throughout the 20th century due to a myriad of factors including deteriorating water quality and overfishing. However, gizzard shad thrived in this changing environment. There is substantial diet overlap between juvenile gizzard shad and young-of-year American shad, and gizzard shad have been implicated in the lack of recovery of American shad stocks in the Susquehanna River (Klauda et al., 1991a). High abundances of gizzard shad may also interfere with the ability of American shad to effectively utilize fish passage facilities, as has been observed at Conowingo Dam (SRAFRFC, 2010). From 2010-2019, the East Fish Lift at Conowingo passed 1,090 gizzard shad per lift on average; the average passage of gizzard shad outnumbered American shad by a ratio of 80:1 during the same time period (Normandeau, 2019).

Recommended Action: Promote the commercial and recreational harvest of flathead catfish, blue catfish, and northern snakehead as means of population control.

Agencies with Regulatory Authority: MDNR, MDA, FDA, USDA

Goal/Target: Maryland has no specific goals or targets for population control of invasive finfish predators. Population reduction and stabilization will be promoted through commercial and recreational fisheries.

Progress: There are no creel limits or size restrictions on the recreational fisheries for the aforementioned species. Likewise, the commercial fishery operates under no size restrictions with an unlimited quota. MDNR has conducted extensive public outreach to encourage recreational harvest of these species. In 2018, the state of Maryland announced the Blue Catfish Purchasing Initiative, which promotes the sale of blue catfish to state institutions with food services. MDNR is currently supporting the Maryland General Assembly in an effort to overturn USDA inspection rules for catfish species which significantly hinder the harvest and sale of blue catfish. MDNR is currently drafting the Invasive Catfish Fishery Management Plan which will further outline goals to control invasive catfish in Maryland waters.

Cost: NA

Timeline: NA

Recommended Action: Control the further spread of flathead catfish, blue catfish, and northern snakehead in waters under Maryland jurisdiction.

Agencies with Regulatory Authority: MDNR, USFWS, SRAFRFC (made up of MDNR, PFBC, PADEP, SRBC, NYDEC, and USFWS members), FERC

Goal/Target: Northern snakehead and blue catfish are already present in most rivers systems in the Chesapeake basin. Flathead catfish populations are more localized and restricted by salinity. Intentional spread of these species is prohibited.

Progress: While Northern snakehead and blue catfish are now present in most suitable waters in the Chesapeake basin, they are mostly absent upstream of Conowingo Dam. For the 2021 fish passage season, volitional passage to Conowingo Pond via the East Fish Lift (EFL) will not be conducted. Alternatively, the West Fish Lift (WFL) will pass anadromous fish upstream via a trap and truck transport program. Every effort will be made to sort the entire catch and remove invasive species captured in the WFL. Volitional upstream passage via the EFL will likely not resume until adequate procedures to control invasive species passage are implemented. Intentional release of invasive catfish or northern snakehead into a different waterbody from where it was caught is illegal in Maryland. Furthermore, it is illegal to possess, import, or transport a live northern snakehead.

Cost: NA

Timeline: NA

Habitat Restoration Programs

MDNR Fish Passage Program (FPP):

The FPP was established in the Chesapeake Bay Agreement in 1987. To date, the FPP has completed 78 projects, reopening a total 454.2 miles of anadromous fish habitat. The program favors dam removals over fish passage facility construction and priority is given to projects which open large stretches of the highest quality habitat. Additionally, priority is given to projects which enhance passage of migratory fish and where shad or river herring stocking programs operate.

MDNR Fish Hatcheries Division:

The MDNR Fish Hatcheries Division sources American shad broodstock from the Potomac River, operating under a collection permit from the Potomac River Fisheries Commission. Stocking of American shad began in 1994 in the Patuxent River. Since that time, stocking has been conducted in various tributaries including the Nanticoke River, Marshyhope Creek, the Choptank River, and the Patapsco River. Currently, American shad stocking occurs on the Choptank and Patapsco Rivers. From 1994-2019, the Fish Hatcheries Division stocked over 55-million American shad in Maryland waters.

Water Quality Improvement Program (Water withdrawals and thermal/toxic discharge):

No specific program exists to address the impacts of water withdrawals, thermal discharge, or toxic discharge on spawning success or juvenile recruitment of American shad. However, all power plants drawing in excess of two-million gallons of surface water per day within the range of American shad have conducted impingement monitoring, and all but one (Wheelabrator) have conducted entrainment monitoring. No American shad were identified by these studies. Consistent with MDNR recommendations, MDE requires a 0.5 ft/second intake velocity and one millimeter screening on all surface water withdrawals to reduce entrainment or impingement of aquatic organisms. Additionally, the MDNR Power Plant Research Program (PPRP) initiated the

Smart Siting Project in 1996 to provide guidance to power plant developers regarding environmental concerns and to identify areas most favorable for power plant development.

Habitat Improvement Programs:

Numerous state programs are involved with land acquisition and habitat improvement including Program Open Space, the Rural Legacy Program, the Maryland Environmental Trust, the Forest Legacy Program, and the Conservation Reserve Enhancement Program. To date, these programs have protected approximately 657,690 acres of state land. Various other county organizations and non-profits also work to conserve natural land throughout the state. While these land conservation efforts do not focus directly on anadromous fish habitat protection or restoration, American shad will benefit indirectly through the preservation of natural land cover. The MDNR FHEP has identified watershed management priorities throughout the Chesapeake basin (Figure 11); the FHEP advises state and county planners on land management decisions and how they relate to fish habitat and fisheries health.

Permit Review Process:

The MDE is the primary permitting agency in the state of Maryland for water withdrawals, channelization and dredging, and land use/development. The MDNR Environmental Review Team reviews most proposed projects; anadromous fish spawning areas identified by O'Dell et al. (1975, 1980) are considered during the review process. Other MDNR programs including the FHEP may periodically act as advisors to the environmental review process.

Maryland Climate Change Commission (MCCC):

The MCCC advises the Governor and General Assembly “on ways to mitigate the causes of, prepare for, and adapt to the consequences of climate change.” While this effort does not directly address the effects of climate change on American shad, it does promote ecosystem resiliency efforts which indirectly work to conserve anadromous fish habitat.

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Table 1. Historical and currently accessible spawning habitat for American shad in waters regulated by the state of Maryland. River kilometer (rkm) habitat estimates incorporate both tidal and non-tidal spawning reaches. Habitat area estimates were only available for tidal sections of spawning reaches and are thus not a complete representation of spawning habitat.

System	Historical Habitat (rkm)	Current Habitat (rkm)	Percent Available	Historical Tidal Habitat Area (ha)	Current Tidal Habitat Area (ha)	Percent Available	Limited By
Chester	32.3	32.3	100.0	1,139	1,139	100.0	Habitat
Choptank	75.4	75.4	100.0	1,360	1,360	100.0	Habitat
Nanticoke	44.9	44.9	100.0	1,018	1,018	100.0	Habitat
Patapsco	45.9	34.4	75.0	76	76	100.0	Dam
Patuxent	71.9	71.9	100.0	869	869	100.0	Habitat
Pocomoke	62.9	62.9	100.0	761	761	100.0	Habitat
Upper Bay*	213.5	213.5	100.0	46,274	46,274	100.0	Habitat
Wicomico	26.1	21.0	80.3	400	348	86.9	Dams
TOTAL	580.4	556.3	97.1	51,897	51,844	99.9	

* The estimates presented in this table represent river km and habitat area estimates for all areas in the Upper Chesapeake Bay where spawning could theoretically occur. In reality, the bulk of American shad spawning activity in the Upper Chesapeake Bay occurs in the Susquehanna River, Susquehanna Flats, and North East River. This ‘preferred’ spawning area is composed of 53.1 rkm and 14,071 ha of habitat.

Table 2. Historical and currently accessible rearing habitat for American shad in waters regulated by the state of Maryland. Current habitat is only shown if it differs from historically available habitat. River kilometer (rkm) habitat estimates incorporate both tidal and non-tidal rearing areas. Habitat area estimates were only available for tidal sections of rearing areas and are thus not a complete representation of rearing habitat.

System	Historical Preferred Habitat (rkm)	Current Preferred Habitat (rkm)	Historical Acceptable Habitat (rkm)*	Historical Marginal Habitat (rkm)*	Historical Preferred Tidal Habitat (ha)*	Historical Acceptable Tidal Habitat (ha)*	Historical Marginal Tidal Habitat (ha)	Current Marginal Tidal Habitat (ha)	Limited By
Chester	31.0	31.0	14.9	61.1	1,028	945	9,966	9,966	Habitat
Choptank	85.5	85.5	16.3	123.9	1,445	1,118	29,479	29,479	Habitat
Nanticoke	49.4	49.4	2.6	15.9	2,086	341	4,299	4,299	Habitat
Patapsco	35.6	25.3		64.7			9,601	9,601	Dam
Patuxent	87.3	87.3	8.1	55.3	1,132	1,243	11,898	11,898	Habitat
Pocomoke	55.8	55.8	8.9	7.8	599	107	706	706	Habitat
Upper Bay	169.2	169.2			35,461				Habitat
Wicomico	7.1	0.0		56.7			2,037	1,985	Dams
TOTAL	520.7	503.3	50.8	385.3	41,752	3,754	67,986	67,934	

* 100% of historical habitat of this type is currently available.

Table 3. Inventory of riverine barriers that American shad can potentially encounter in waters regulated by the state of Maryland. Data on dam dimensions, storage, and drainage area were queried from the Maryland Department of the Environment’s dam inventory unless otherwise noted.

Barrier Name	System	Passage Type	Latitude	Longitude	Dam Height (m)	Dam Length (m)	Normal Dam Storage (m ³)	Upstream Drainage Area (km ²)
Van Bibber Dam	Bush	Steep	39.4686252	-76.3347629	4.3	182.9	16,035	142
Jones Lake Dam	Chester	Steep	39.2469732	-75.8179534	4.0	359.7	40,705	112
Williston Mill Dam	Choptank	Denil	38.8277559	-75.8468516	5.5	192.0	481,057	20
Tuckahoe Dam	Choptank	Denil	38.9675226	-75.9425857	4.3	518.2	32,070	258
Rewastico Pond Dam	Nanticoke	None	38.4107288	-75.7536718	3.0	140.2	49,709	26
Galestown Mill Pond Dam	Nanticoke	Steep	38.5675008	-75.7133338	2.7	152.4	141,850	21
Mill Creek Dam	Nanticoke	None	38.5948363	-75.8267003	3.4	91.4	33,304	9
Lake Chambers Dam	Nanticoke	None	38.6963525	-75.7646134	3.4	118.9	27,137	14
Daniel’s Dam	Patapsco	Denil	39.3147660	-76.8164480	8.2	137.2	634,009	688
Ft. Meade Dam	Patuxent	Denil	39.0927176	-76.7683366	2.7	21.3	4,934	313
Higgins Mill Pond Dam	Transquaking	None	38.5189625	-75.9646440	2.7	275.8	310,837	30
Elkton Dam	Upper Bay	Denil	39.6123677	-75.8172330	1.5	33.5	6,167	194
Wilson’s Mill Dam	Upper Bay	Denil	39.6145948	-76.2060399	2.7	51.8	6,167	466
Conowingo Dam	Upper Bay	Lift	39.6612120	-76.1731769	32.0	1,415.5	382,378,800	69,930
Allen Town Pond Dam	Wicomico	None	38.2832350	-75.6889157	2.4	121.9	118,414	33
Camden Avenue Dam	Wicomico	None	38.3361100	-75.6133320	3.7	106.7	123,348	30
Anderson Mill Pond Dam	Wicomico	None	38.3557130	-75.6738657	3.4	73.2	48,106	15
Isabella Street Weir	Wicomico	None	38.3718872	-75.6027689	NA	NA	NA	100*

* Upstream drainage area for Isabella Street Weir was calculated using the USGS StreamStats Application

Table 4. Mean daily 2018 water withdrawal and entrainment and impingement of American shad by power plants in the Maryland portion of the Chesapeake basin.

Power Plant	System	Mean Daily 2018 Water Withdrawal (million gallons/day)	Entrainment	Impingement	Source
Calvert Cliffs	Chesapeake Bay	3350	0 (2006)	0 (1975-1995)	EA, 2008a; Ringger, 2000
Vienna	Nanticoke	0.0188	no data	no data	
Wagner	Patapsco	239	0 (2006-2007)	0 (2006-2007)	EA, 2008b
Wheelabrator	Patapsco	37.8	no data	0 (1985-1986)	EA, 2017
Chalk Point	Patuxent	268	0 (1977-1979)	0 (1976-1985)	EPRI, 2010
Morgantown	Potomac	819	0 (2007)	0 (2006-2007)	EPRI, 2009

Table 5. Watershed characteristics for American shad spawning rivers, queried from the USGS StreamStats application. Percent forest and impervious land surface coverage was estimated by the Maryland Department of Planning in 2010 unless otherwise noted. Percent developed land was estimated by the National Land Cover Database, combining land use classes 21-24.

System	Tributary	% Forest	% Impervious	% Developed	Drainage Area (km ²)
Upper Bay	Susquehanna	65.7*	1.7**	8.3	71,225
	North East	36.1	7.8	17.2	201
	Elk	27.1	6.1	17.4	679
	Bohemia				
	C&D Canal				
Sassafras	22.3	2.2	5.3	248	
Chester	Chester	21.5	2.5	6.8	1,230
Choptank	Choptank	21.4	3.6	7.6	2,049
Nanticoke	Nanticoke	27	3.5	7.3	2,142
Wicomico	Wicomico	36	10.6	19.4	482
Pocomoke	Pocomoke	54.4	2.2	5.8	1,261
Patuxent	Patuxent	40.1	13.5	25.3	2,401
Patapsco	Patapsco	25.9	23.7	44.2	1,567

* Maryland Department of Planning forest coverage data was not available for the entire Susquehanna watershed. The provided estimate is sourced from the enhanced 1992 National Land Cover Database.

** Maryland Department of Planning impervious surface coverage data was not available for the entire Susquehanna watershed. The provided estimate is sourced from the 2011 National Land Cover Database.

Figure 1. Chester River American shad spawning reach. The spawning pathway represents the path used for river km habitat estimates. All historical spawning habitat is currently accessible.

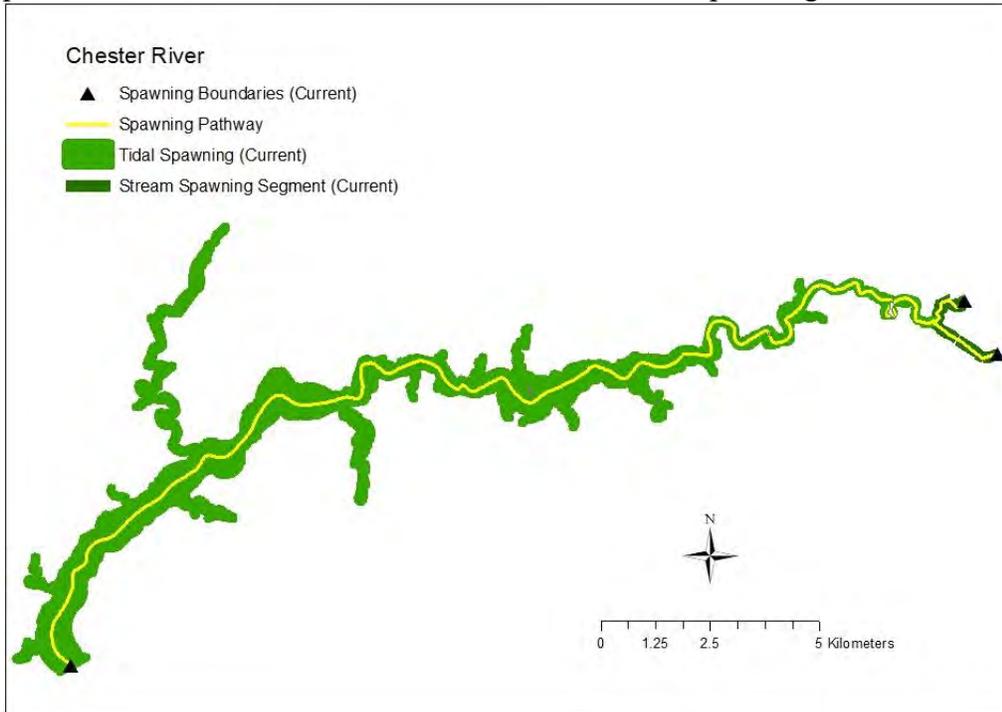


Figure 2. Choptank River American shad spawning reach. The spawning pathway represents the path used for river km habitat estimates. All historical spawning habitat is currently accessible.

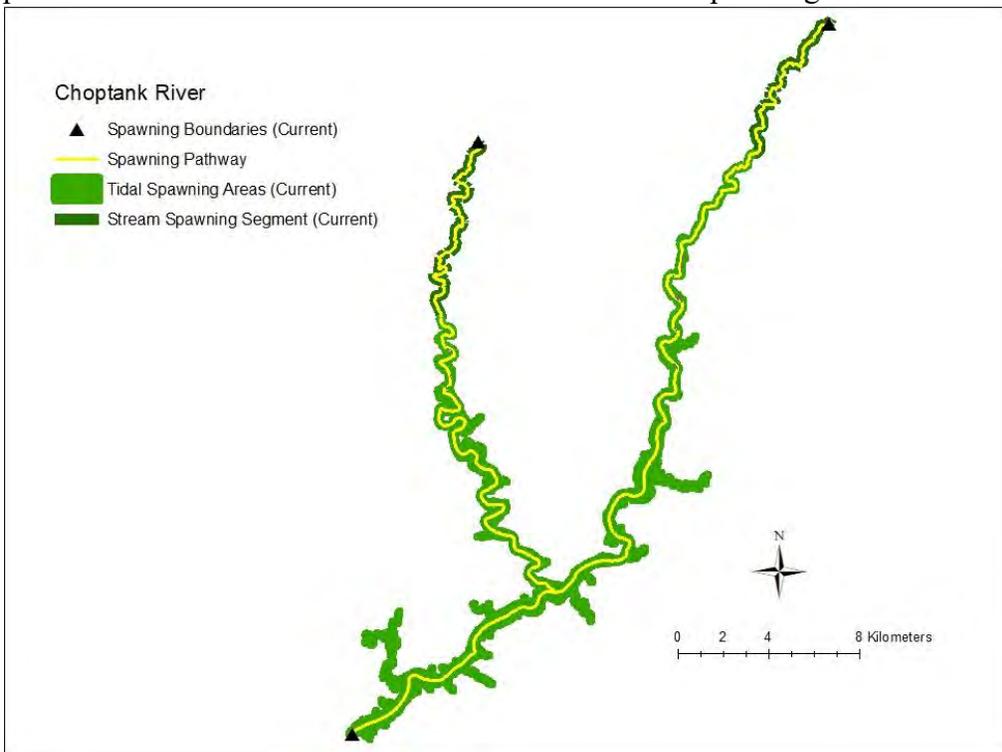


Figure 3. Nanticoke River American shad spawning reach. The spawning pathway represents the path used for river km habitat estimates. All historical spawning habitat is currently accessible.

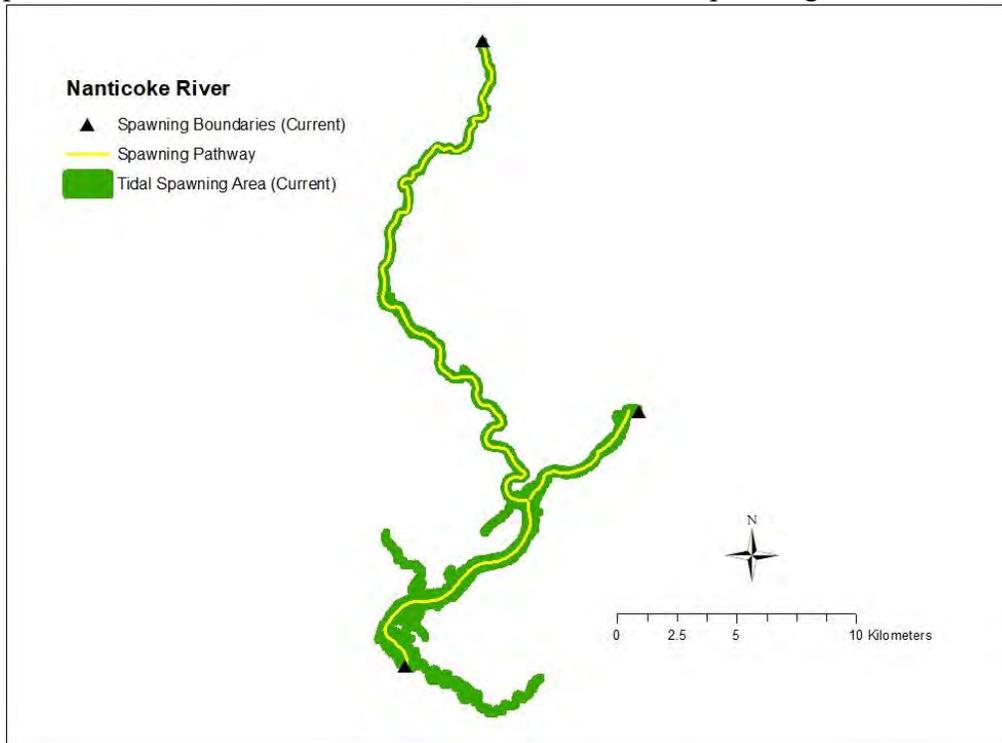


Figure 4. Current and historical Patapsco River American shad spawning reaches. The spawning pathway represents the path used for river km habitat estimates.

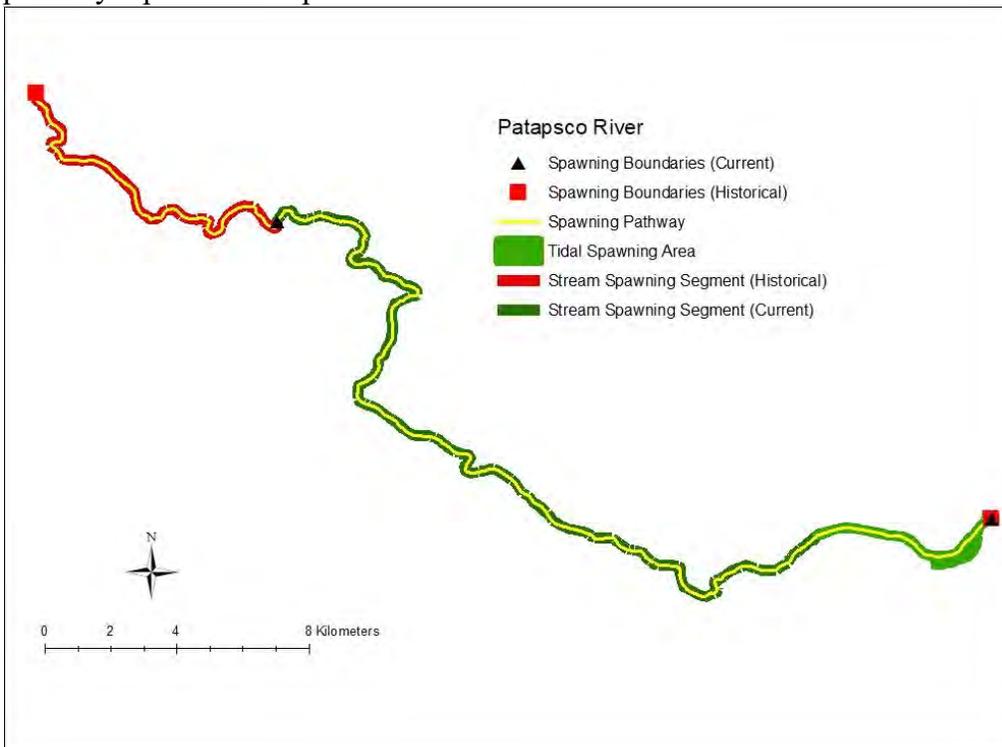


Figure 5. Patuxent River American shad spawning reach. The spawning pathway represents the path used for river km habitat estimates. All historical spawning habitat is currently accessible.

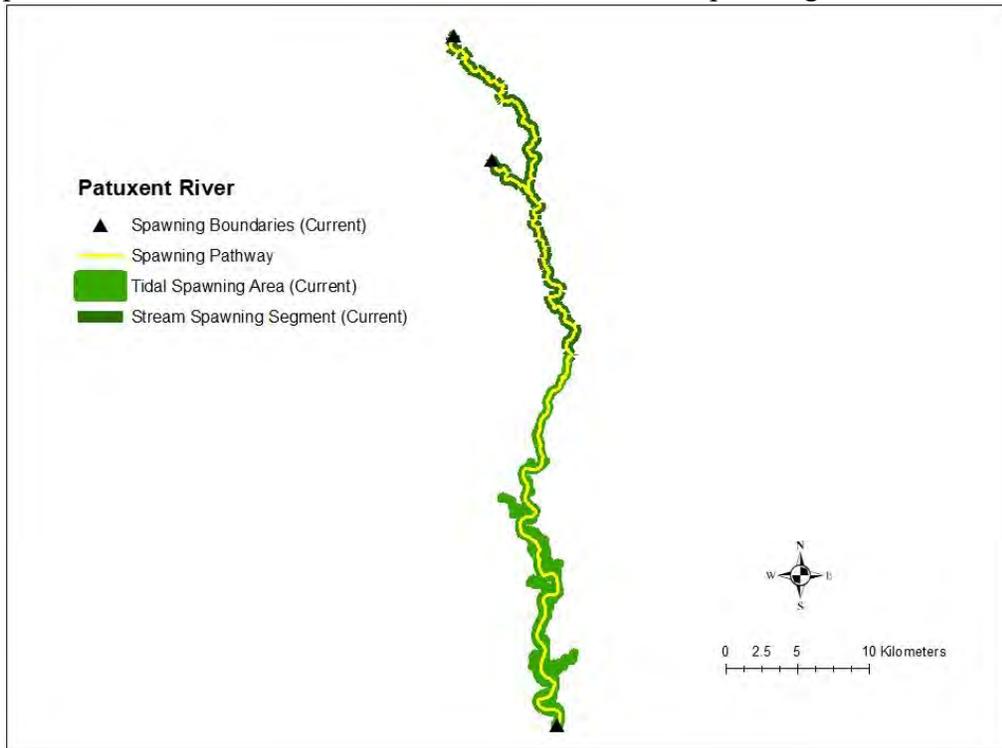


Figure 6. Pocomoke River American shad spawning reach. The spawning pathway represents the path used for river km habitat estimates. All historical spawning habitat is currently accessible.

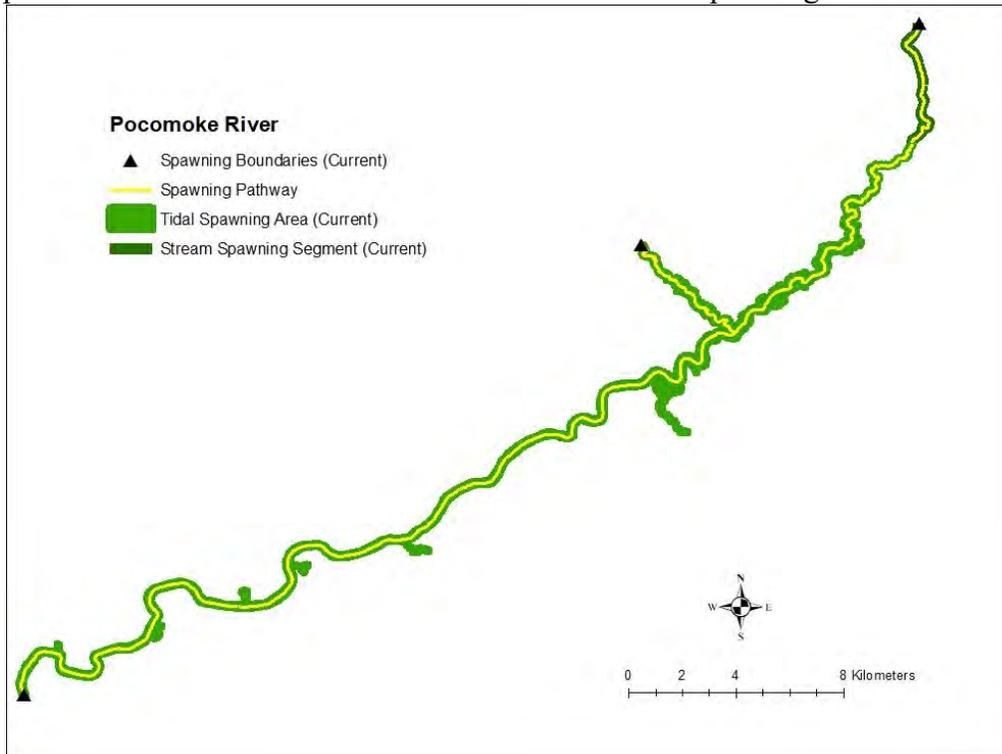


Figure 7. Upper Chesapeake Bay American shad spawning areas. The spawning pathway represents the path used for river km habitat estimates. All historical spawning habitat is currently accessible, though Conowingo Dam presents a significant barrier.

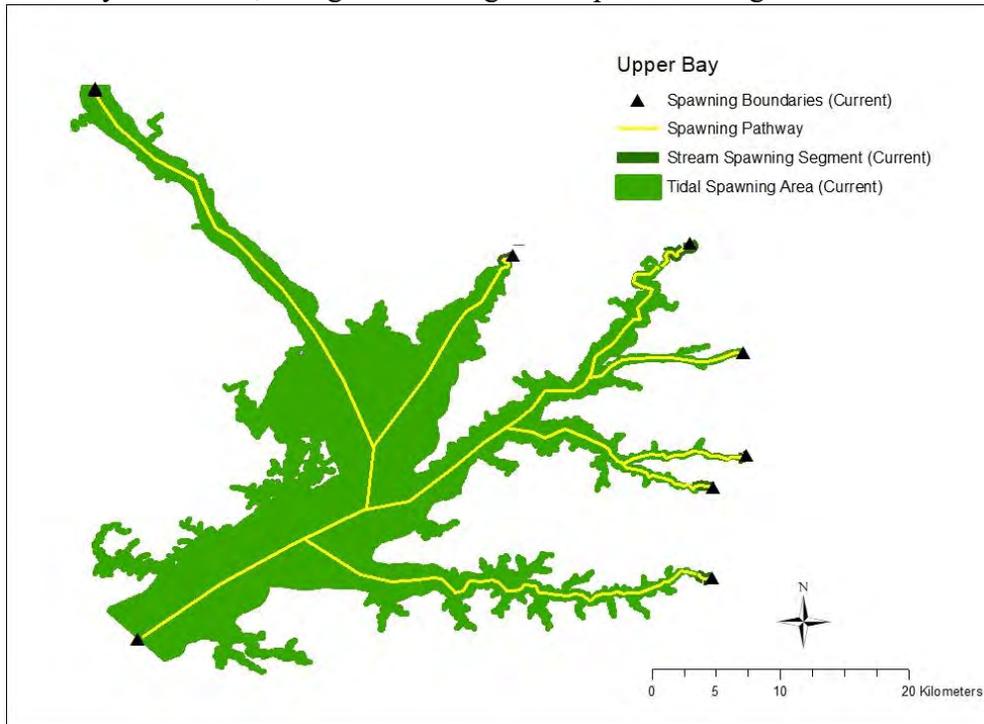


Figure 8. Preferred Upper Chesapeake Bay American shad spawning areas. The spawning pathway represents the path used for river km habitat estimates. All historical spawning habitat is currently accessible, though Conowingo dam presents a significant barrier.

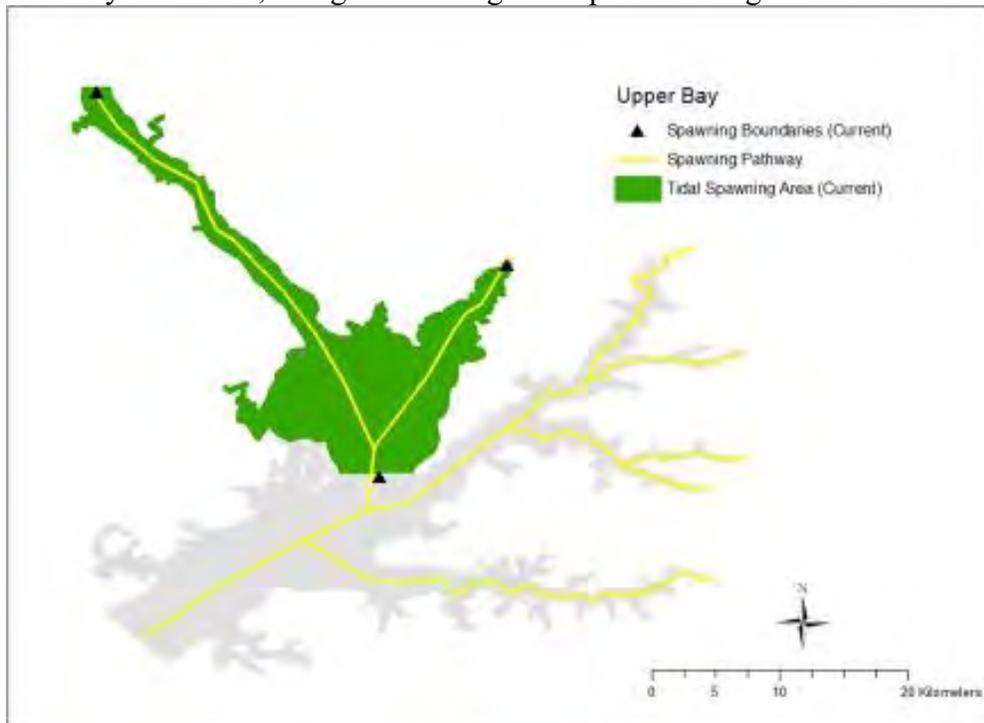


Figure 9. Current and historical Wicomico River American shad spawning reaches. The spawning pathway represents the path used for river km habitat estimates.

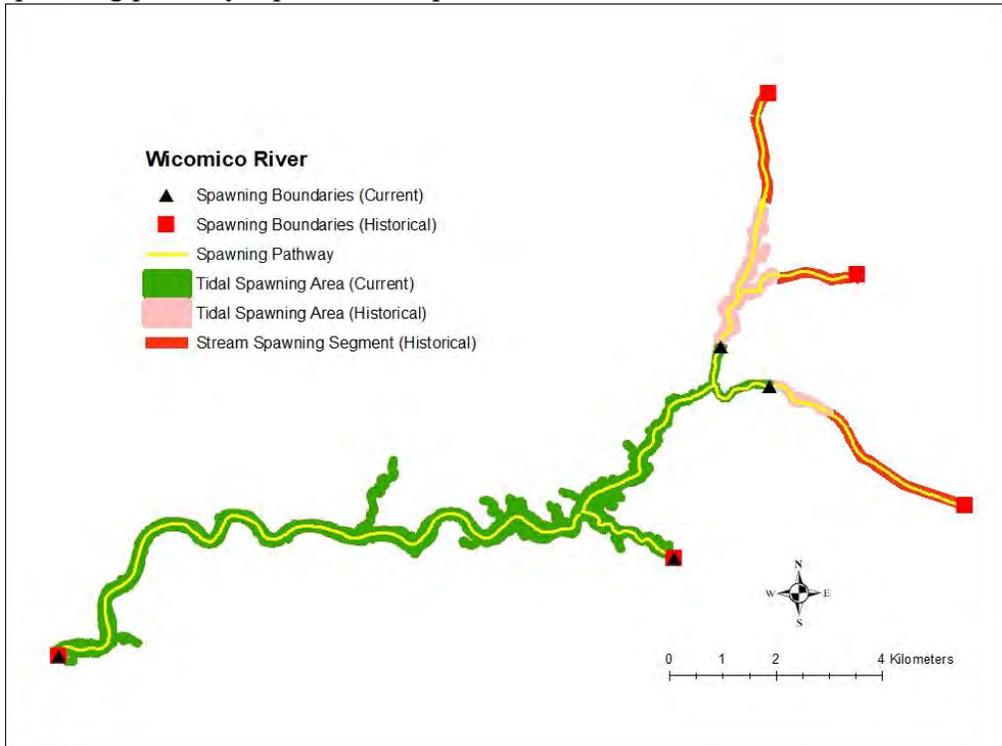


Figure 10. American shad rearing habitat in select Maryland rivers. Rearing habitat favorability was assigned according to average bottom salinity: Preferred (0-4 ppt), Acceptable (4-7 ppt), or Marginal (7-13 ppt). Rearing habitat lines represent the path used for river kilometer habitat estimates. Barriers restricting access to historic habitat are present on the Patapsco and Wicomico Rivers.

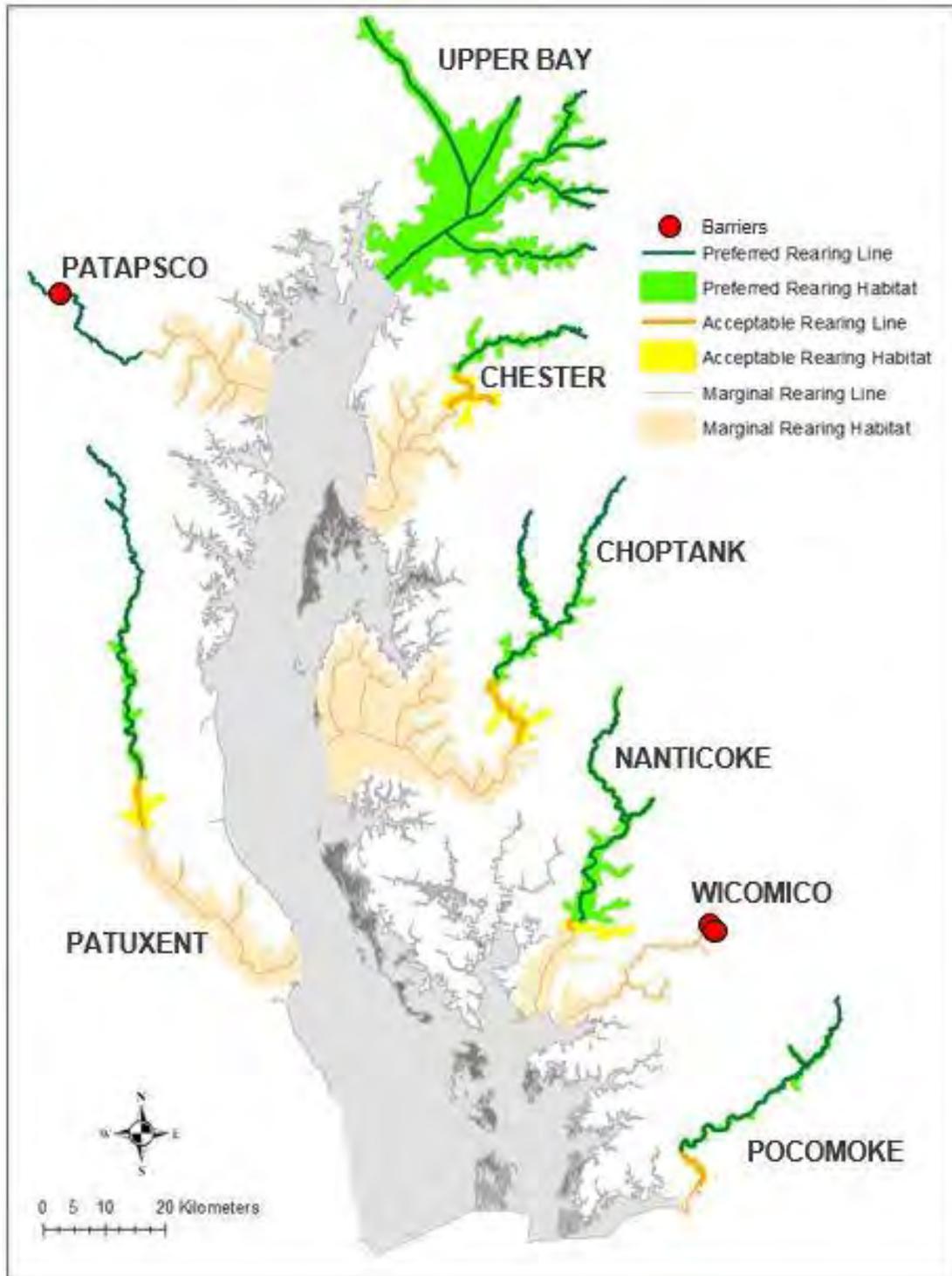
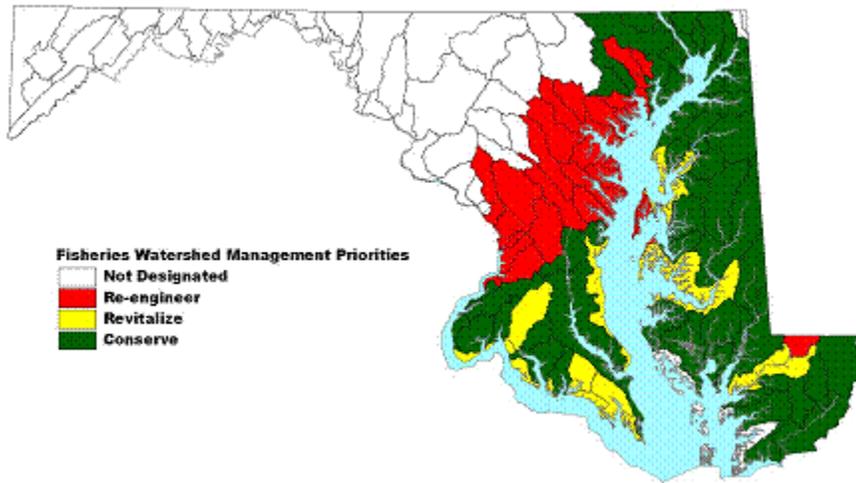


Figure 11. Fisheries watershed management priorities in Maryland. *Conserve* - areas with less than 5% impervious surface; recommend harvest restrictions and stocking for effective fisheries management and watershed conservation for sound land management. *Revitalize* – areas with 5-10% impervious surface; recommend options to decrease harvest and increase stocking to compensate for effective fishery management, and conserve and revitalize watershed for sound land management. *Re-engineer* – areas with 10-15% impervious surface; fisheries are highly variable; traditional fishery management tools not reliable. Recommend conserving and reconstructing degraded watershed for land management.



Acronyms:

- MDNR: Maryland Department of Natural Resources
- MDE: Maryland Department of the Environment
- MDOT: Maryland Department of Transportation
- MPA: Maryland Port Authority
- FHPEP: MDNR Fisheries Habitat and Ecosystem Program
- PPRP: MDNR Power Plant Research Program
- FPP: MDNR Fish Passage Program
- MCCC: Maryland Commission on Climate Change
- MDA: Maryland Department of Agriculture
- USFWS: United States Fish and Wildlife Service
- FERC: Federal Energy Regulatory Committee
- SRAFRFC: Susquehanna River Anadromous Fish Restoration Cooperative
- ASMFC: Atlantic States Marine Fisheries Commission
- NMFS: National Marine Fisheries Service
- MAFMC: Mid Atlantic Fisheries Management Council
- NOAA: National Oceanographic and Atmospheric Administration
- NFWF: National Fish and Wildlife Foundation
- NDPES: National Pollutant Discharge Elimination System
- EPA: Environmental Protection Agency
- FDA: Food and Drug Administration
- USDA: United States Department of Agriculture
- PFBC: Pennsylvania Fish and Boat Commission
- PADEP: Pennsylvania Department of Environmental Protection
- SRBC: Susquehanna River Basin Commission
- NYDEC: New York Department of Environmental Conservation
- CBP: Chesapeake Bay Program
- EBTJV: Eastern Brook Trout Joint Venture
- EFL: Conowingo East Fish Lift
- WFL: Conowingo West Fish Lift
- PAHs: Polycyclic Aromatic Hydrocarbons
- DO: Dissolved Oxygen
- TMDL: Total Maximum Daily Load

NORTH CAROLINA AMERICAN SHAD HABITAT PLAN

**North Carolina Division of Marine Fisheries
North Carolina Wildlife Resources Commission**

January 2021

Introduction

Amendment 3 to the Atlantic States Marine Fisheries Commission (ASMFC) Interstate Fishery Management Plan required all states and jurisdictions to develop an Implementation Plan, which consists of two components: 1) a Sustainable Fishery Plan (for jurisdictions wishing to keep fisheries open) and 2) a Habitat Plan. The requirement for a Habitat Plan was in recognition of the fact that much of the decline in American shad stocks along the Atlantic coast is related to degradation of spawning and juvenile habitat from anthropogenic impacts such as upland development, stormwater runoff, and sewer discharges, as well as barriers to migration from dam construction and culverts. Restoration, protection, and enhancement of American shad habitat is a key component of rebuilding populations of this species to levels that will support their ecological, economic, and cultural roles.

The purpose of the Habitat Plan is to collate information regarding the status of and threats to American shad spawning, nursery, and juvenile habitats specific to a particular state or jurisdiction, and to develop restoration programs to address such threats. This document serves as North Carolina's American Shad Habitat Plan and as detailed below, draws heavily upon existing documents and efforts.

North Carolina Coastal Habitat Protection Plan (CHPP)

In recognition of the fact that protecting habitat was equally as important as preventing overfishing, the North Carolina General Assembly passed the Fisheries Reform Act in 1997. This law established the requirement to develop a Coastal Habitat Protection Plan (CHPP) to protect and enhance important coastal fisheries habitats. It also contains a directive to three major rulemaking commissions (Environmental Management, Coastal Resources and Marine Fisheries) to cooperate in the development and implementation of the plan. The NC Division of Marine Fisheries (NCDMF) and the Albemarle-Pamlico National Estuary Partnership (APNEP) were charged with writing the plan and serve as lead agencies within the NC Department of Environmental Quality (NCDEQ).

The initial version of the CHPP, approved by all three commissions in December 2004, detailed the status, trends and threats to six major fisheries habitats: the water column, submerged aquatic vegetation, wetlands, shell bottom, soft bottom and ocean hard bottom (Street et al 2005). The CHPP is reviewed and updated on a five-year schedule. The first review of the CHPP began in 2009, and the updated plan was published in 2010 (Deaton et al 2010). The last update was completed in 2016 (NCDEQ 2016) and the 2021 update is currently underway. Similar to the previous versions, the 2016 CHPP includes four overarching goals for protection of coastal fish habitat.

- 1) Improve effectiveness of existing rules and programs protecting coastal fish habitats
- 2) Identify and delineate strategic coastal habitats
- 3) Enhance habitat and protect it from physical impacts
- 4) Enhance and protect water quality

Because of the breadth and depth of data and information contained in the document, both state and federal agency staff have come to rely on the CHPP as a resource. Recommendations from the CHPP have been incorporated into several programs within state government as funding priorities.

To minimize duplication, the NC American Shad Habitat Plan (hereafter “Habitat Plan”) relies heavily upon the extensive body of information and recommendations contained within the 2016 CHPP. As such, various sections of the CHPP are referred to in the sections of the Habitat Plan for more detailed and specific information. Because the 2016 CHPP is 475 pages (including appendices), it is not included as an appendix to this Habitat Plan. Individual chapters of the 2016 CHPP as well as the two year Implementation Plans can be found on the CHPP website (<http://portal.ncdenr.org/web/mf/habitat/chpp/07-2020-chpp>), and all documents related to Strategic Habitat Areas (referred to in the Habitat Assessment below) can be found on the Strategic Habitat Areas website (<http://portal.ncdenr.org/web/mf/habitat/SHAs>).

Previous versions of the CHPP have been accompanied by two year implementation plans. However, to improve efficacy of implementation, the 2021 CHPP update will focus on a five key priority habitat issues.

1. Environmental Rule Compliance to Protect Habitat
2. Habitat Monitoring to Assess Status and Regulatory Effectiveness
3. Submerged Aquatic Vegetation Protection and Restoration, with Focus on Water Quality Improvements
4. Wetland Protection and Enhancement, with Focus on Nature-Based Methods
5. Reducing Inflow and Infiltration associated with Wastewater Infrastructure to Improve Coastal Water Quality

Objectives and recommendations will be restructured to be actionable, with a focus on policy and rule development as needed. Non-regulatory measures can also be highly effective, given enough staff and monetary resources. Because the source document is comprehensive and remains relevant, it will be selectively updated as needed to support priority issues.

The Habitat Plan follows the suggested outline contained in Amendment 3, consisting of a Habitat Assessment, Threats Assessment, and Habitat Restoration Program.

Section 1: Habitat Assessment

American Shad Spawning and Nursery Area Habitat

American shad are an anadromous, pelagic, highly migratory schooling species (Colette and Klein-MacPhee 2002). They utilize a variety of habitats with variations in habitat preference due to location, season, and ontogenetic stage.

American shad are found in most habitats identified by the CHPP including water column, wetlands, submerged aquatic vegetation (SAV), soft bottom, hard bottom, and shell bottom. Each habitat is part of a larger habitat mosaic, which plays a vital role in the overall productivity and health of the coastal ecosystem. Although American shad are found in all of these habitats, the usage varies by habitat. Additionally, these habitats provide the appropriate physicochemical and biological conditions necessary to maintain and enhance the American shad population. Limburg and Waldman (2009) have shown that the loss of habitat contributes to the decline in anadromous fish stocks throughout the world. Therefore, the protection of each habitat type is critical to the sustainability of the American shad stock.

American shad ascend most coastal rivers in North Carolina (Figure 1). American shad are most abundant in the Roanoke, Chowan, Tar-Pamlico, Neuse, Northeast Cape Fear, and Cape Fear rivers as well as Albemarle and Pamlico sounds (Street *et al.* 1975; Marshall 1976a;

Sholar 1977; Fischer 1980; Hawkins 1980a; Hawkins 1980b; Johnson *et al.* 1981; Winslow *et al.* 1983; Winslow *et al.* 1985).

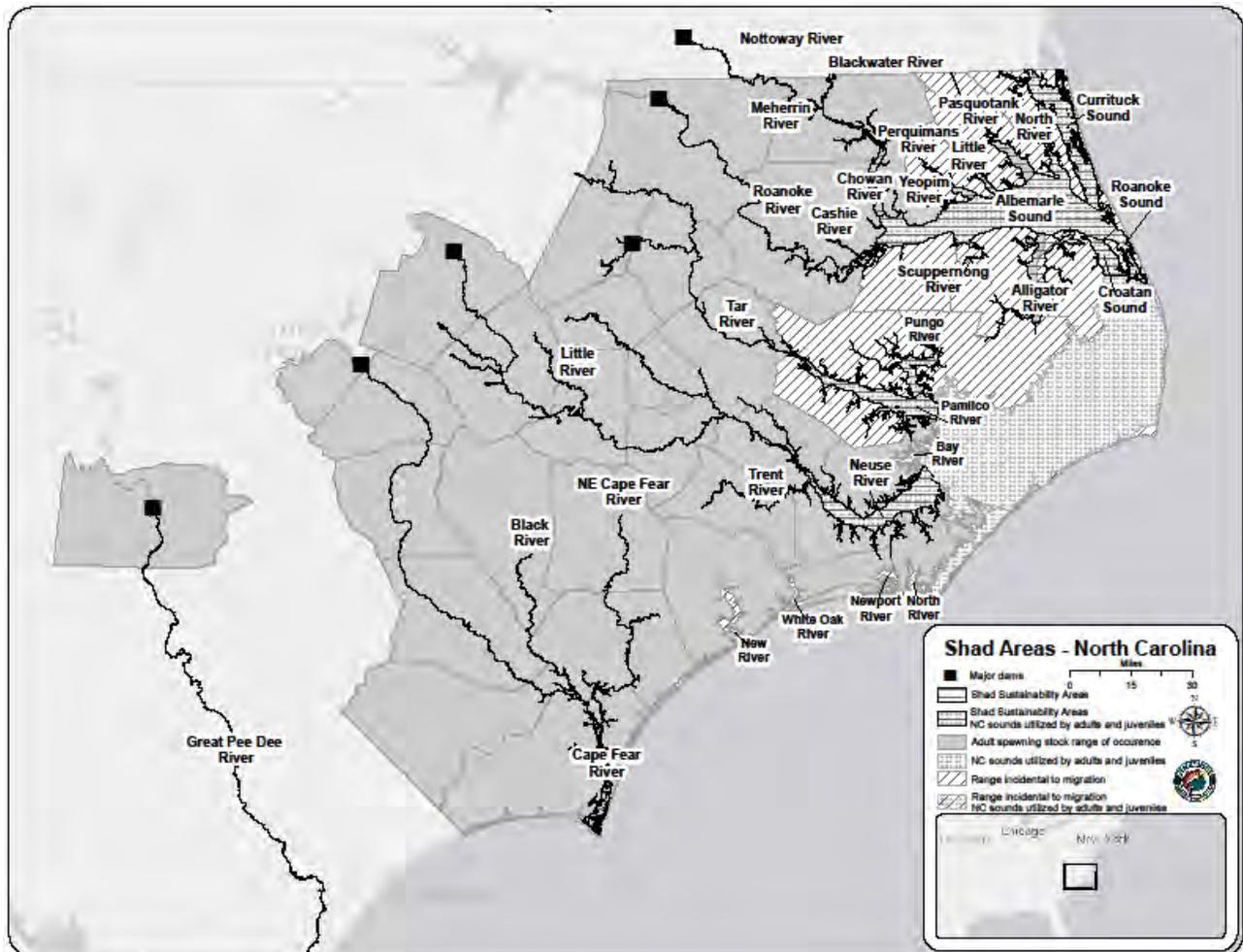


Figure 1. North Carolina river systems depicting the extent of American shad occurrence and habitat use.

The NCDMF conducted American shad spawning area surveys between 1973 and 1984 in the major coastal tributaries. Physical characteristics of the spawning grounds vary somewhat between systems. Shad may spawn anywhere within a given spawning area but prefer shallow flats composed of sand, gravel, or a combination of the two bordering the rivers (Smith 1907; Walburg and Nichols 1967; Beasley and Hightower 2000; Hightower and Sparks 2003). Water conditions may vary from clear to very turbid, water depth ranges from 3 to 30 ft, and temperatures may range from 8 to 26°C (Walburg and Nichols 1967; Winslow 1990). Shad eggs are non-adhesive and slightly heavier than water, so they gradually sink and are carried along by currents (Ulrich *et al.* 1979). Sufficient water current is required to keep eggs suspended in the water column for successful development (Cheek 1968; Sholar 1977). Current velocity, increasing light and temperature are all important cues for anadromous spawning activity (Klauda *et al.* 1991; Orth and White 1993). Successful spawning of American shad coincides with water velocities between 2 and 3 ft/s (61-91 cm/s) (Fay *et al.* 1983; Mackenzie *et*

al. 1985; Hill et al. 1989). This requirement may explain why American shad spawning was found only in the Nottoway, Blackwater, Meherrin, Roanoke, Tar, Neuse and Cape Fear rivers, all of which have relatively strong currents compared to other coastal rivers in the state. During their spawning migration, anadromous fish actively avoid waters with low dissolved oxygen and extremely high turbidity (Steel 1991). All American shad spawning areas have been documented either by capture of eggs or larvae, or direct observation of spawning.

Nursery habitat for anadromous fishes is generally downstream from spawning locations but still within the freshwater low-salinity system. Juvenile American shad use the same general nursery areas as river herring, but the young shad prefer deeper pools away from the shoreline and occasionally move into shallow riffles (Funderburk et al. 1991). During summer, juvenile shad migrate from the bottom during the day to the surface at night (Loesch and Kriete 1984). A decrease in temperature during the fall and slight increases in river flow seem to trigger downstream movement of American shad (Funderburk et al. 1991). Nursery area surveys conducted by NCDMF noted decreased catch of juvenile shad in October on the Cape Fear River, Neuse River, and Albemarle Sound (Winslow 1990).

Albemarle Sound

The Albemarle Sound area includes Albemarle Sound, all of its tributaries, Currituck, Roanoke, and Croatan sounds, and all of their tributaries. The Albemarle Sound, including the tributaries, occupies more than 212,055 hectares (ha) of open water as well as extensive bordering swamps in northeastern North Carolina (Figure 1). The Albemarle Sound measures 88.5 km long by 4.8 to 22.5 kilometers (km) wide. Shoals generally extend 0.8 km from shore, sloping to a central basin 5.5 to 7.6 meters (m) depth. The bottom consists mostly of sand in the central basin with some mud and detritus on the shoals. The shoreline in eastern Albemarle Sound consists mostly of cypress swamps and a few small beaches, while beaches and low bluffs become more frequent to the west (Street *et al.* 1975). Croatan and Roanoke sounds are estuarine with salinities ranging from 1 part per thousand (ppt) to 28 ppt, depending on tide, wind, and rainfall. Salinities of 2 to 4 ppt sometimes occurred in eastern Albemarle Sound, while salinities of 1 to 2 ppt were occasionally recorded from the downstream portions of the North, Pasquotank, Alligator, and Little Rivers. North, Pasquotank, and Alligator Rivers and eastern Albemarle Sound serve as channels of the Atlantic Intracoastal Waterway (Street *et al.* 1975).

Currituck Sound joins the Albemarle Sound from the northeast, and Croatan and Roanoke sounds join from the southeast. Ten rivers drain into Albemarle Sound, which joins Pamlico Sound through Croatan and Roanoke sounds, and in turn, empties into the Atlantic Ocean via Oregon Inlet. Most of the rivers originate in coastal swamps and do not function as spawning areas for American shad. Moving across the Albemarle Sound drainage rivers from east to west, the North River joins the Albemarle Sound from the northeast. The North River originates in coastal swamps and occupies about 6,475 ha and is about 34 km in length (Baker and Smith 1965, as cited by Street *et al.* 1975, p. 7). The Pasquotank River, covering about 13,468 ha, is the main southern outlet for the Great Dismal Swamp, and is about 64 km in length (Baker and Smith 1965, as cited by Street *et al.* 1975, p. 7). The Little River originates in the Great Dismal Swamp, occupies about 2,849 ha, and flows approximately 30.6 km south to the Albemarle Sound (Baker and Smith 1965, as cited by Street *et al.* 1975, p. 8). The Perquimans River also originates in the Great Dismal Swamp and flows approximately 50 km to the Albemarle Sound and occupies about 5,180 ha (Baker and Smith 1965, as cited by Street *et al.* 1975, p. 8). The Yeopim River (including Yeopim Creek) originates in local swamps and is about 16 km long and occupies approximately 1,554 ha (Baker and Smith 1965, as cited by Street *et al.* 1975, p. 8). The Roanoke and Chowan Rivers are the principal tributaries of the Albemarle Sound, and areas of these rivers are known to function as American shad spawning areas (Street *et al.*

1975; Johnson *et al.* 1981; Winslow *et al.* 1983; Winslow *et al.* 1985; Hightower and Sparks 2003).

Chowan River

Chowan River occupies approximately 15,540 ha and extends 80.5 km from the North Carolina-Virginia border to the Albemarle Sound. Three rivers drain into the Chowan River: Meherrin, Nottoway, and Blackwater. The Meherrin and Nottoway rivers are the major tributaries of the Chowan and begin in the Piedmont Plateau of Virginia (Smith 1963, as cited by Street *et al.* 1975, p. 8). The Blackwater River, a smaller tributary, originates as a coastal plain swamp in Prince George County, Virginia (VDGIF 2019). All three rivers function as a spawning area for American shad.

Roanoke River (including Cashie River)

The Roanoke River and Cashie River join the Albemarle Sound from the west, via a shared delta. The Cashie River originates in local swamps, occupies approximately 777 ha, and flows 48.3 km to enter the Albemarle Sound (Carnes 1965, as cited by Street *et al.* 1975, p. 8). The Roanoke River flows 220.5 km from the Roanoke Rapids Dam (Roanoke Rapids, North Carolina) to the Albemarle Sound. The river begins in the foothills of Virginia's Blue Ridge Mountains and crosses the Fall Line just below Roanoke Rapids Dam (Carnes 1965, as cited by Street *et al.* 1975, p. 9). Near the North Carolina-Virginia border, John H. Kerr Reservoir, Lake Gaston, and Roanoke Rapids Lake impound the Roanoke River. The U.S. Army Corps of Engineers (USACE) and Dominion Energy operate these reservoirs for flood control and hydropower generation. A dam was constructed in 1955 on the River at Roanoke Rapids, North Carolina, 220.6 km (137 miles) from the mouth (Carnes 1965). This dam does not have facilities for fish passage and is therefore the upper limit of migration. Recent studies have shown that American shad accumulate in the Roanoke Rapids, NC and Weldon, NC areas, and newly-spawned American shad eggs have been collected there (Knutzen 1997; Hightower and Sparks 2003; Kornegay and Thomas 2004; Harris and Hightower 2007). Downstream of Roanoke Rapids Lake, flows in the Roanoke River are highly regulated by discharges from the dams. From the Roanoke Rapids Dam, the Roanoke River flows 221 km (137 miles) through an expansive area of bottomland hardwood wetlands to its confluence with Albemarle Sound. Major tributaries of this lower section of the Roanoke River include Broad Creek, Devil's Gut, Broad Neck Swamp, Conoho Neck Swamp, and the Cashie River.

Tar-Pamlico River

The Tar-Pamlico watershed is the fourth largest in North Carolina encompassing 14,090 square km (5,440 square miles). From its headwaters in Person County, the Tar-Pamlico watershed is drained by 3,790 km (2,355 miles) of tributaries along its 290 km (180 mile) main-channel length to Pamlico Sound near the confluence of the Pungo River (NCDWQ 1999; Figure 1). The river reach upstream of the City of Washington is designated as the Tar River and is primarily freshwater, while the reach below Washington, referred to as the Pamlico River, has characteristics of an upper estuary. Sixteen counties and six large municipalities (Greenville, Henderson, Oxford, Rocky Mount, Tarboro, and Washington) are represented within the basin. Major tributaries to the river include Fishing, Swift, and Tranters creeks, Cokey Swamp, and the Pungo River. Main stem headwater reaches, and tributaries are located within the outer piedmont physiographic region and are characterized by low flows during dry seasons due to minimal groundwater discharge (NCDWQ 1999). However, since the majority of the basin is located within the coastal plain, these waters are largely characterized by slow flowing, low gradient, brown and blackwater streams with extensive floodplains often comprised of bottomland hardwood forests and marshes.

From its headwaters in the North Carolina Piedmont the Tar River flows 288 km in a southeasterly direction before emptying into the Pamlico River at sea level. The Tar River drainage basin is approximately 802,893 ha. The principal tributaries of the Tar River, as it is ascended, are Tranters Creek, Town Creek, Fishing Creek, and Swift Creek. The Pamlico River is actually a continuation of the Tar River with the name change occurring at the US 17 bridge near Washington, North Carolina. It flows southeasterly about 53 km and empties into the Pamlico Sound about 51 km west of Ocracoke Inlet. The Pamlico River drainage basin is approximately 315,967 ha. The principal tributaries of the Pamlico River, in addition to the Tar River, include Pungo River, Rose Bay, Swanquarter Bay, Juniper Bay, Chocowinity Bay, Broad Creek, Bath Creek, Blount Creek, Durham Creek, North Creek, Goose Creek, South Creek, and Upper Goose Creek (Marshall 1976b).

Neuse River

The Neuse River is formed by the confluence of the Eno and Flat Rivers in the Piedmont region of North Carolina and flows in a southeasterly direction through the coastal lowlands discharging into Pamlico Sound 430 km from its origin (Hawkins 1980b; McMahan and Lloyd 1995; Figure 1). It resides entirely in North Carolina and has a drainage area of 1,449,869 ha. of land (Hawkins 1980b; McMahan and Lloyd 1995). The river flows in a southeasterly direction from its origin to below New Bern where it bends to flow in an easterly direction to the Pamlico Sound. Bay River, West Bay, and a portion of the western Pamlico Sound, and Core Sound from Ocracoke Inlet to Drum Inlet are also included in the basin (Marshall 1977).

The Neuse River and its tributaries drain all or a portion of 18 counties. The upper third of the river lies in the Piedmont Region of the state with the fall line occurring halfway between Raleigh and Smithfield, North Carolina. Flow regimes in the Neuse River downstream of Raleigh, North Carolina are regulated by Falls Lake Dam (rkm 370), which was built in 1983 by the USACE to create an impoundment for flood control, water supply, water quality, and recreational purposes. Spawning of American shad has been documented in the main stem Neuse River up to the first dam near Raleigh and in several tributaries: Contentnea Creek, Mill Creek, Little River, Swift Creek, and Crabtree Creek (Burdick and Hightower 2006). Principal tributaries of the Neuse River as it is ascended from its mouth to New Bern are: Broad Creek, Turnagain Bay, South River, Smith and Greens Creek at Oriental, Adams Creek, Dawson Creek, Clubfoot Creek, Hancock Creek, Beards Creek, Slocum Creek, Goose Creek, Upper Broad Creek, and the largest tributary, Trent River. The Trent River is quite large and has an important tributary, Brice Creek. All of these tributaries lie within 55 km of the mouth of the river and are within 93 km of Ocracoke Inlet. Between New Bern and Goldsboro, the principal tributaries are Bachelor Creek, Swift Creek, Cove Creek, and Contentnea Creek. These creeks are all within 103 km of the mouth, and Contentnea Creek at river mile 103 is the last major tributary until Little River is reached near Goldsboro, NC (rkm 261). Further upstream tributaries include: Thoroughfare Swamp, Mill Creek, Black Creek, Swift Creek, Marks Creek, Walnut Creek, Crabtree Creek, Perry Creek, and Smiths Creek. All other tributaries are located upstream of Falls Lake Dam, which represents the uppermost limit of American shad migration in the Neuse River Basin.

Cape Fear River

The Cape Fear River, the largest river system in the state, forms at the confluence of the Deep and Haw rivers in the Piedmont region of North Carolina and flows southeasterly for approximately 274 km to the City of Wilmington and from there, 40 km south to discharge into the Atlantic Ocean at Cape Fear, near Southport, North Carolina (Fischer 1980; Figure 1). The main river drainage area encompasses an area of 15,708 sq km with an additional 7,988 sq km included in the drainage areas of the Deep and Haw Rivers. It is the largest river basin lying completely within the state of North Carolina. The basin includes portions of 27 counties and

114 municipalities, and encompasses 9,984 km of freshwater streams and rivers, 36 lakes and reservoirs, and 15,864 ha of estuarine waters (NCDWQ 1995). The Cape Fear River has five major tributaries: Upper Little River, Lower Little River, Rockfish Creek, Black River, and Northeast Cape Fear River, which is the largest of the tributaries. The major tributaries which feed the Cape Fear River are dark, acidic, swamp-drainage streams; however, the waters of the Cape Fear River itself are usually very turbid (Fischer 1980).

Three navigational dams and locks were built between 1913 and 1934. The dams prevented fish from ascending the river above except during boat lockages or periods of high water. Although the dams were provided with fish ladders, anadromous fishes did not use them (Davis and Cheek 1967, as cited by Fischer 1980) and were prevented from accessing historic spawning habitat around Smiley Falls (rkm 290) and further upstream. However, through an agreement among NC Wildlife Resources Commission (NCWRC), USACE, and US Fish and Wildlife Service, fish are locked upstream through all three locks during the spawning run of anadromous fishes in the spring (Nichols and Louder 1970, as cited by Fischer 1980). In 2012, a rock arch fishway was constructed at the base of Lock and Dam 1 (rkm 97) to provide continuous, volitional fish passage, and USACE halted locking operations for fish passage at Lock and Dam 1 after the fishway was completed. Buckhorn Dam (rkm 316) prevents further migrations to potential upstream spawning habitat except during extreme flood events.

Pee Dee River

The Yadkin-Pee Dee River basin is the second largest basin in North Carolina and covers approximately 7,213 square miles in 21 counties (NCDWQ 2008). The Yadkin River originates in the Blue Ridge Mountains in Caldwell and Wilkes counties and flows through the Piedmont region until being joined by the Uwharrie River to form the Pee Dee River. The Pee Dee River continues its southeast course through North and South Carolina to Winyah Bay at the Atlantic Ocean. Other major tributaries in North Carolina, from downstream to upstream, include the Waccamaw River, Lumber River, and Rocky River. The Yadkin-Pee Dee River is heavily impacted by dams, and the most downstream dam, Blewett Falls Dam (rkm 303), prevents upstream migrations of American Shad. Prior to dam construction in the basin, American Shad were recorded as far upstream as Wilkesboro, NC (rkm 725; Stevenson 1897). Approximately 25 km of American Shad spawning habitat is located in the North Carolina portion of the Pee Dee River downstream of Blewett Falls Dam, while the remaining spawning habitat is in South Carolina. The Yadkin Pee Dee River is not covered in the CHPP because all waters in the North Carolina portion of the basin are designated as inland waters and are not under NCDMF jurisdiction.

Other Coastal Rivers

The North River (Carteret County), Newport River, White Oak River and New River are small coastal rivers located in southeastern North Carolina. These rivers are not presently known as American shad spawning or nursery habitat areas, but historical data has been collected on some (White Oak River and New River) that documents the presence on American shad.

Habitat Designations

There are several different designations used in North Carolina that identify, delineate, and designate functionally important habitat areas. Some of the key designations for anadromous species are nursery areas, anadromous fish spawning areas and strategic habitat areas. These designations are presented below and discussed in the 2016 CHPP.

Nursery areas: Those areas in which for reasons such as food, cover, bottom type, salinity, temperature and other factors, young finfish and crustaceans spend the major portion of their initial growing season [NCMFC rule 15A NCAC 03N .0102 (a)].

Primary nursery area (PNA): Those areas of the estuarine system where initial post-larval development takes place. These areas are located in the uppermost sections of a system where populations are uniformly very early juveniles [NCMFC rule 15A NCAC 03N .0102 (b)].

Secondary nursery areas (SNA): Those areas of the estuarine system where later juvenile development takes place. Populations are usually composed of developing sub-adults of similar size which have migrated from upstream primary nursery areas to the secondary nursery area located in the middle portion of the estuarine system [NCMFC rule 15A NCAC 03N .0102 (c)].

[Inland] primary nursery areas (IPNA): Those [inland] areas inhabited by the embryonic, larval, or juvenile life stages of marine or estuarine fish or crustacean species due to favorable physical, chemical or biological factors [NCWRC rule 15A NCAC 10C.0502].

Anadromous fish spawning areas (AFSA): Those areas where evidence of spawning of anadromous fish has been documented by direct observation of spawning, capture of running ripe females, or capture of eggs or early larvae [NCMFC rule 15A NCAC 03I .0101 (b) (20) (C)].

Anadromous fish nursery areas: Those areas in the riverine and estuarine systems utilized by post-larvae and later juvenile anadromous fish [NCMFC rule 15A NCAC 03I .0101 (b) (20) (D)].

Anadromous Fish Spawning Areas (AFSAs). Anadromous fish spawning areas are defined in NCMFC rule 15A NCAC 03N .0106 and NCWRC rule 15A 10C .0602 as those areas where evidence of spawning of anadromous fish has been documented through direct observation of spawning, capture of running ripe females or capture of eggs or early larvae. The areas are delineated in NCMFC rule 15A NCAC 03R .0115 and NCWRC rule 15A 10C .0603 (Figures 2-5). Anadromous fish spawning areas cover 17% of streams/shorelines and 10% of water bodies in coastal plain portions of CHPP regions. Most AFSAs (70%) are in CHPP Region 1-Albemarle and include the mainstem Roanoke River the Chowan River, and other smaller tributaries.

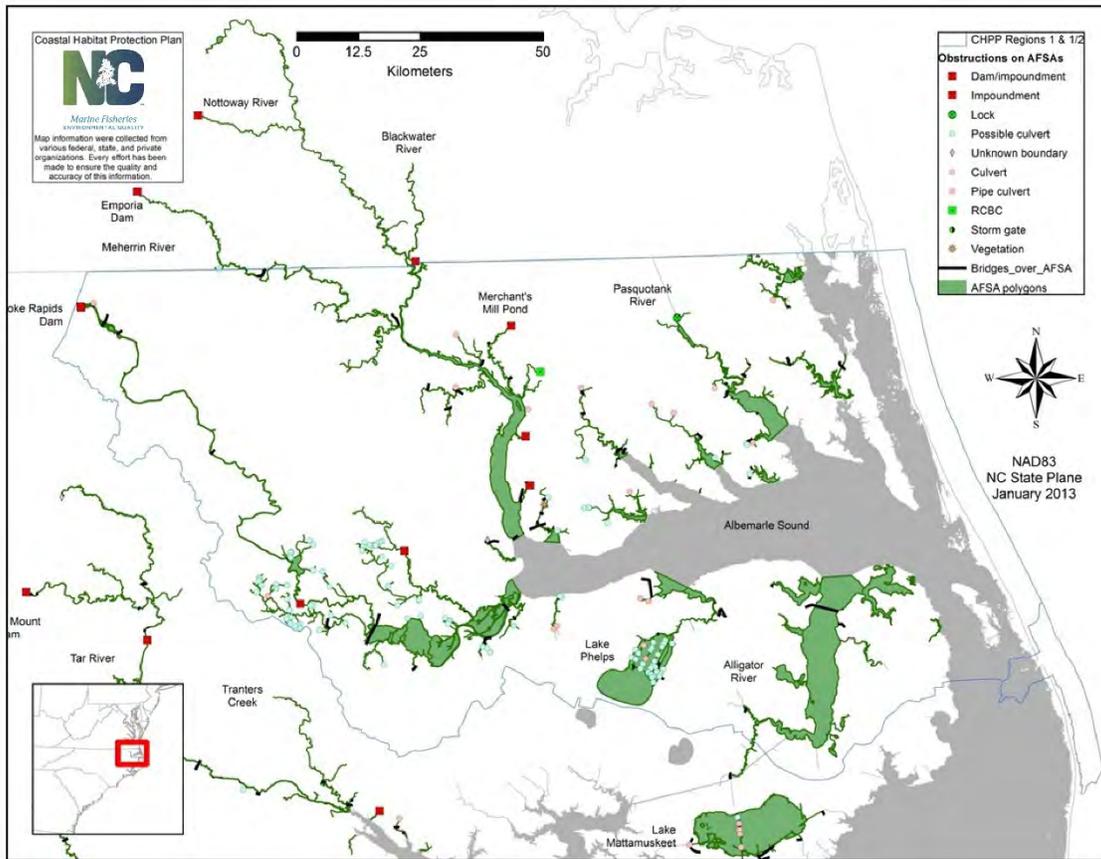


Figure 2. Anadromous fish spawning areas for CHPP Region 1-Albemarle (Albemarle, Currituck, and Roanoke sounds) and Region 1/2 (Oregon Inlet).

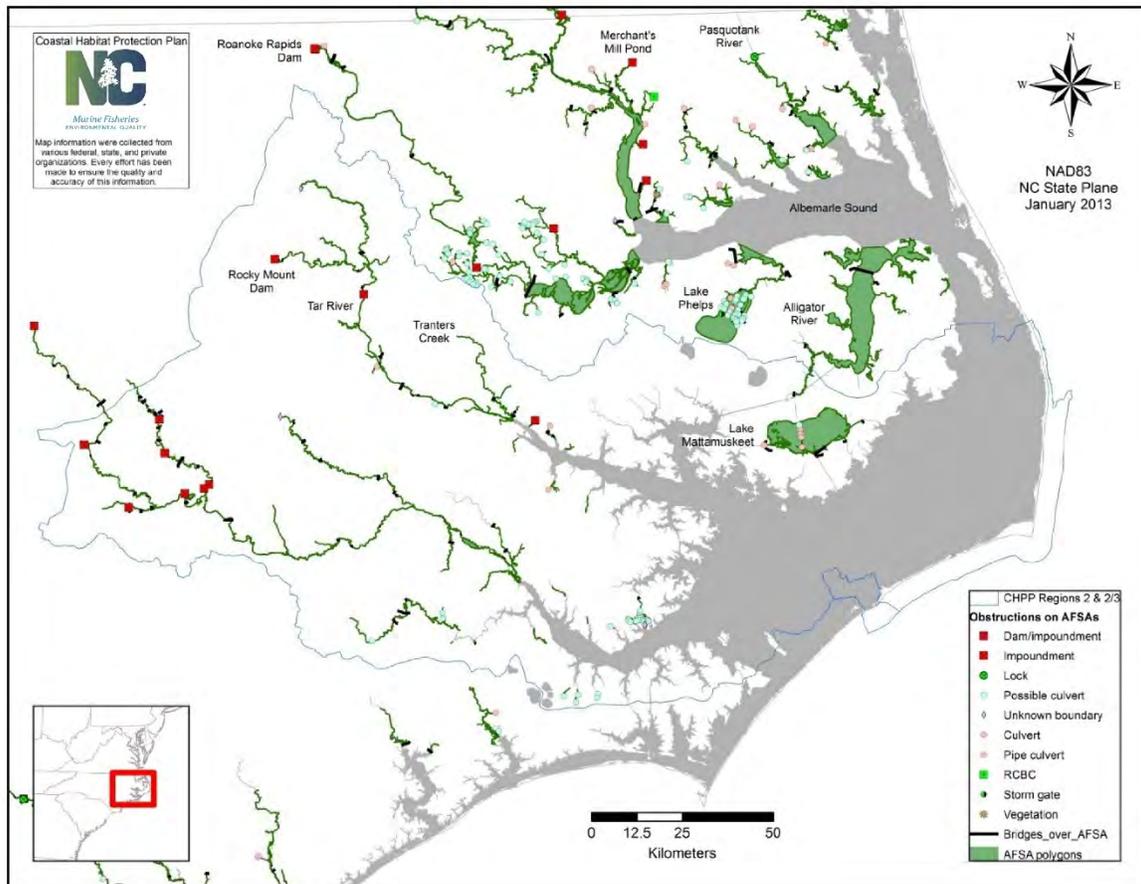


Figure 3. Anadromous fish spawning areas for CHPP Region 2-Pamlico (Pamlico Sound; Neuse and Tar-Pamlico rivers) and Region 2/3 (Ocracoke Inlet).

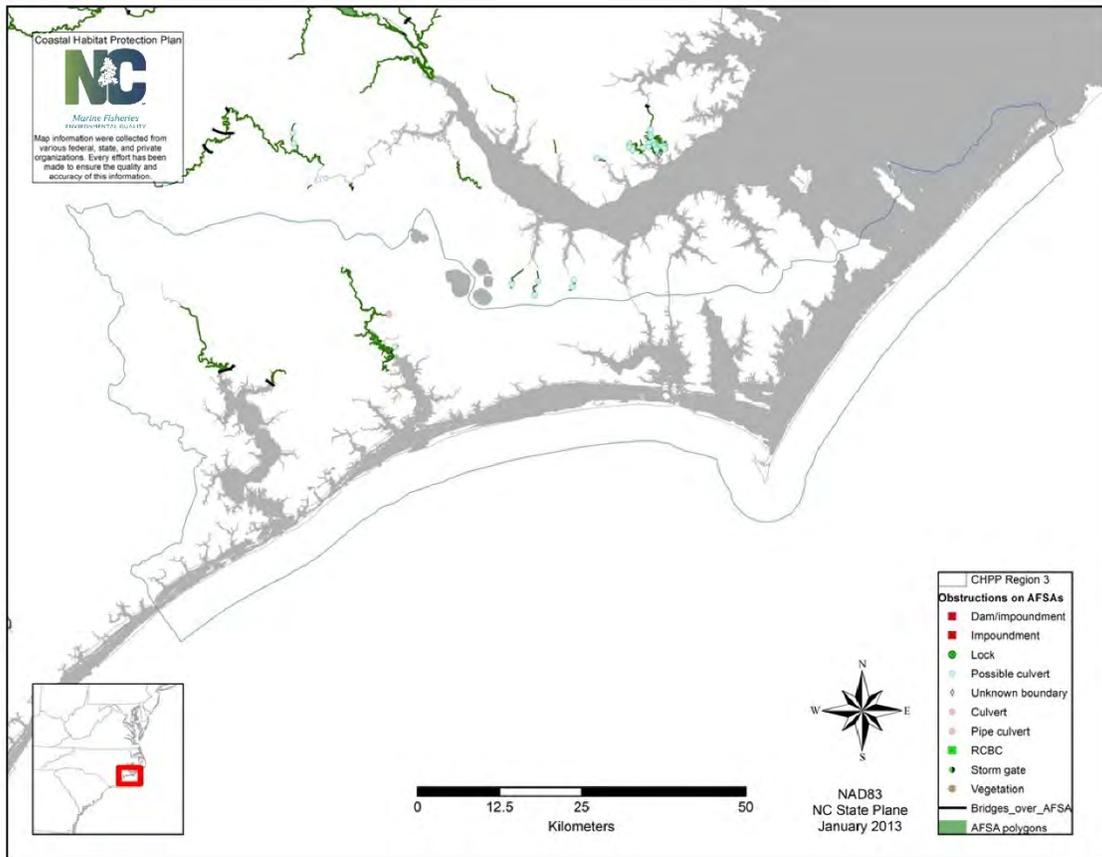


Figure 4. Anadromous fish spawning areas for CHPP Region 3-Core-Bogue (Core, Bogue, Stump Sounds; New and White Oak Rivers)

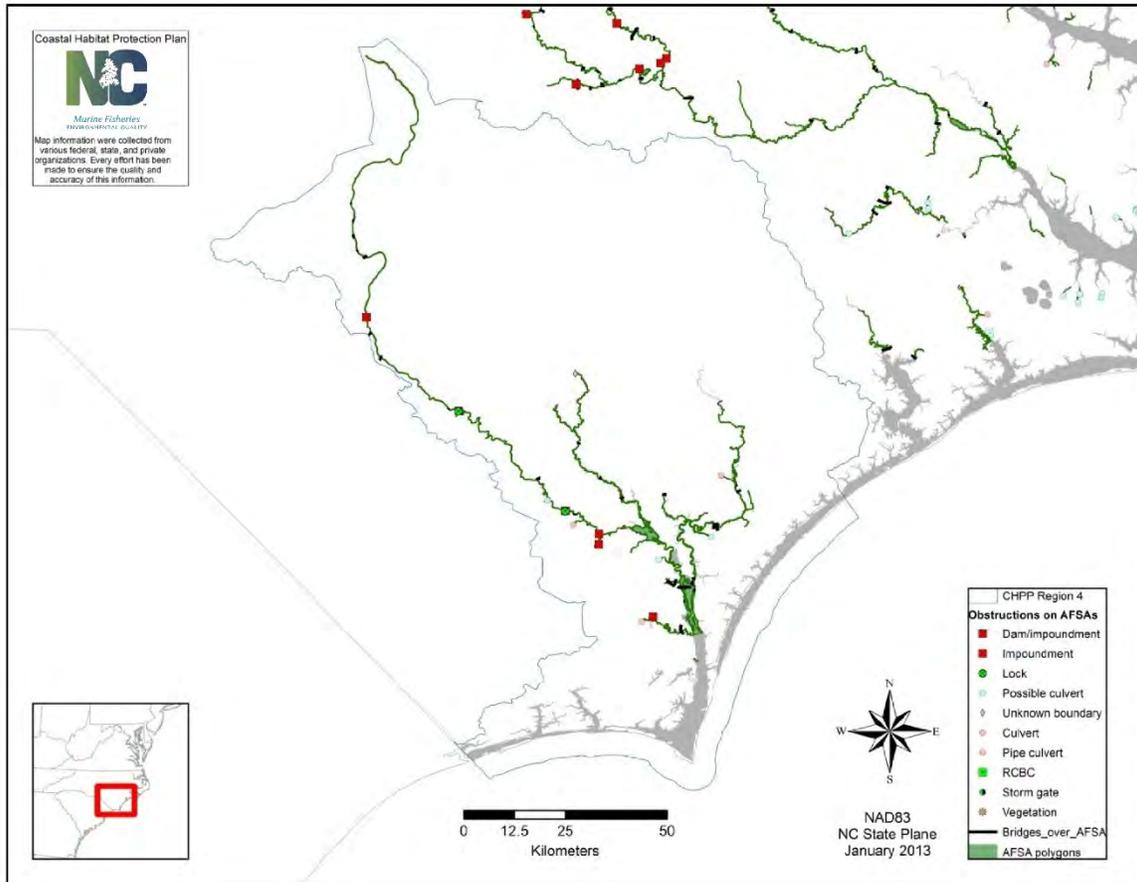


Figure 5. Anadromous fish spawning areas for CHPP Region 4-Cape Fear (Cape Fear River; tidal creeks and sounds, Northeast Cape Fear River, and Black River).

Nursery Areas

North Carolina Primary Nursery Areas, first designated by the NC Marine Fisheries Commission (NCMFC) in 1977, are similar in concept to Federal Habitat Areas of Particular Concern (HPAC). The NCMFC and NCWRC have designated tens of thousands of acres as nursery areas in North Carolina (see below). The state designations are well accepted by the various state and federal regulatory and permitting agencies, as well as by the public.

The NCMFC and NCWRC have designated nursery areas since 1977 and 1990, respectively, based on field sampling (Figures 6 and 7). Approximately 162,000 acres of Coastal Fishing Waters are currently designated by the NCMFC as Primary, Secondary, and Special Secondary Nursery Areas. About 10,000 acres of Inland Fishing Waters in the coastal area are designated as Inland Primary Nursery Areas (IPNA), as well as the following areas of the four main rivers draining to North Carolina's coast:

- Roanoke River, U.S. 258 bridge to Roanoke Rapids Dam (35.5 stream miles, 57.1 km)
- Tar-Pamlico River, railroad bridge at Washington to Rocky Mount Mill Dam (90.2 stream miles, 145.2 km)
- Neuse River, Pitchkettle Creek to Milburnie Dam (160.6 stream miles, 258.4 km)
- Cape Fear River, Lock and Dam #1 to Buckhorn Dam (126.7 stream miles, 203.9 km).

There are specific protections for designated nursery areas included in the rules of the NC

Environmental Management, Coastal Resources and Marine Fisheries commissions. There are relatively few primary nursery areas (PNA) in the Albemarle/Roanoke region, but a relatively large number of IPNAs. There are approximately 162,000 acres of PNA and secondary nursery area (SNA) in North Carolina Coastal Fishing Waters (including both water and wetlands).

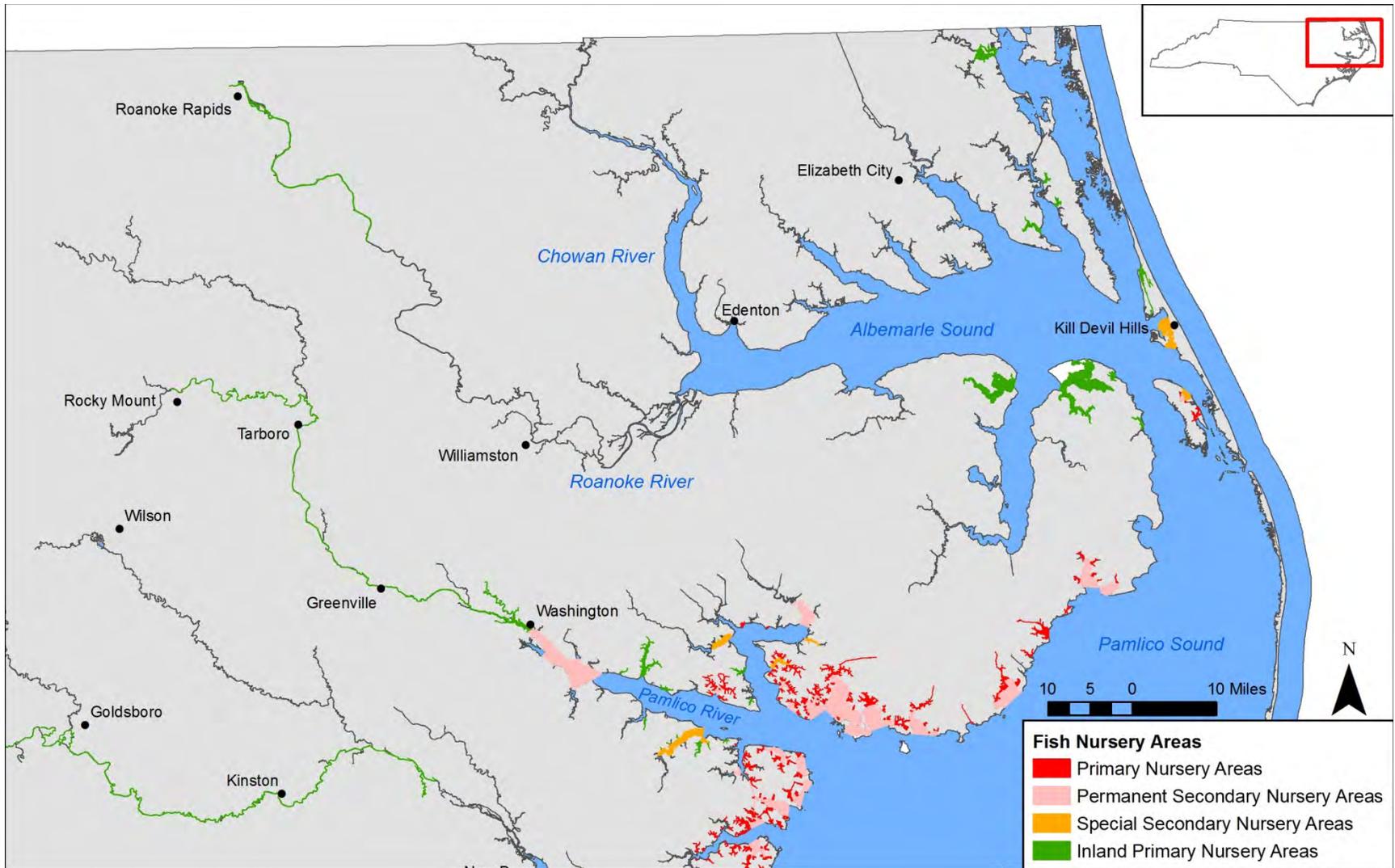


Figure 6. Nursery area designations in the Albemarle Sound and Tar-Pamlico River areas.

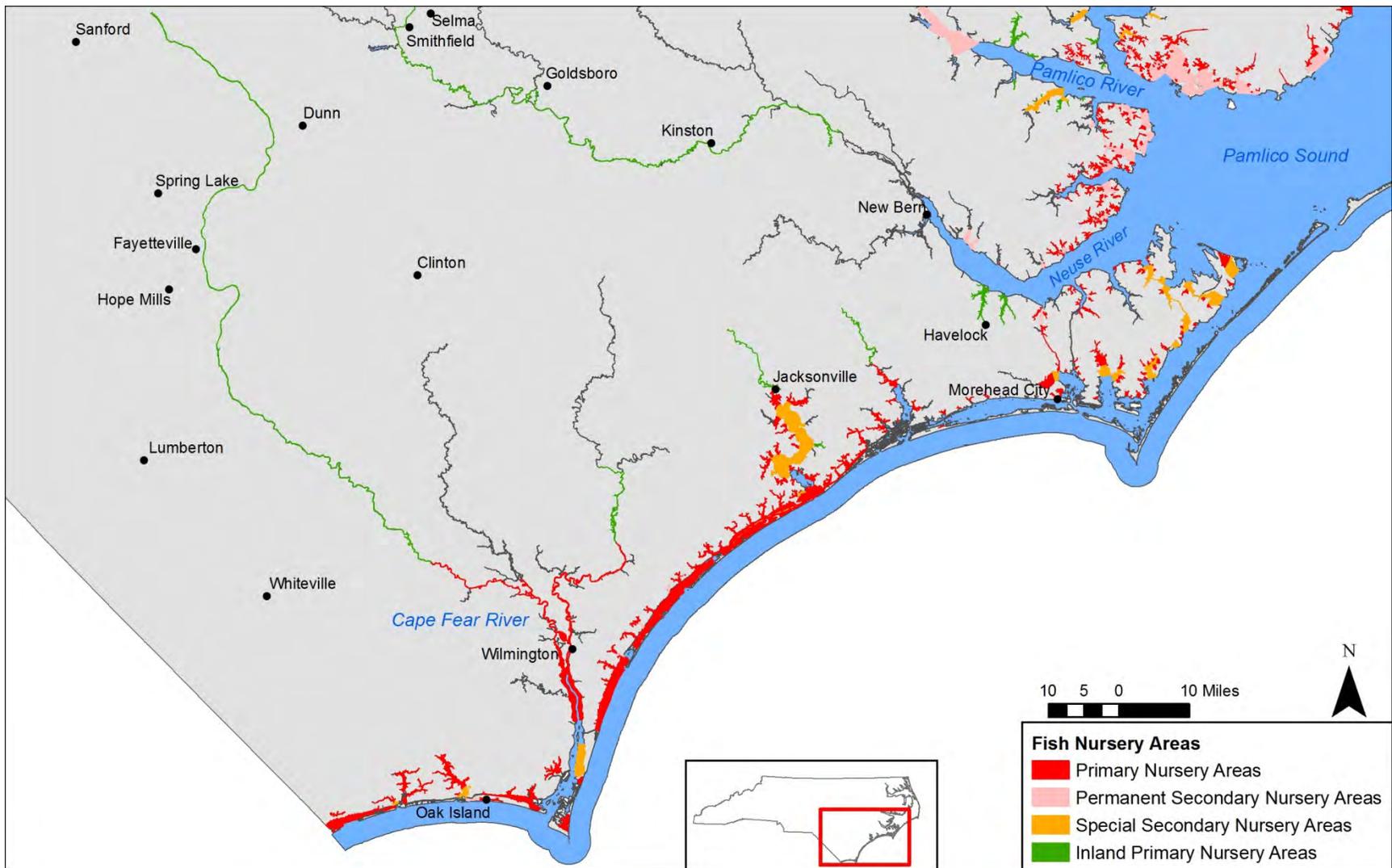


Figure 7. Nursery area designations in the Neuse River and Cape Fear River (including Northeast Cape Fear River, and Black River) areas.

Strategic Habitat Areas (SHAs) - CHPP Chapter 13.2

The identification and designation of Strategic Habitat Areas (SHAs) for marine and coastal fishery species is a critical component in the implementation of North Carolina's approved CHPP. Strategic Habitat Areas were defined in the CHPP as, "specific locations of individual fish habitat or systems of habitats that have been identified to provide exceptional habitat functions or that are particularly at risk due to imminent threats, vulnerability, or rarity" (Street *et al.* 2005). Criteria for identifying SHAs were developed by an advisory committee of the Marine Fisheries Commission established in summer 2005. The committee developed a scientifically based process for identifying candidate areas for designation using biological data and the consensus of a regional expert panel (regional advisory committee).

The identification of existing SHAs was conducted in a two step process: 1) using GIS-based habitat and alteration data in a computerized site-selection analysis, and 2) verifying and modifying information based on input from a scientific advisory committee. Staff and advisory committee specified representation levels for 42 habitat types, or natural resource targets. There were also 18 alteration factors that were represented geospatially (e.g., hydrologic alterations, water quality degradation). The site selection program MARXAN was used to select areas that met representation levels while also minimizing alteration. The scientific advisory committee then modified the computer results based on their unique knowledge and experience. The SHAs were corroborated with biological data, ecological designations, and specific knowledge of the area. The SHA nominations will be incorporated into conservation and restoration planning efforts.

SHA designations are based on regional analyses that identify optimally placed habitat areas of various ecological condition (exceptional or at risk). SHAs may include areas that have already been protected by other designations, as well as areas not currently recognized in any way. A network of designated SHAs providing habitat connections throughout North Carolina's coastal waters should ensure that the complex life history needs of all species are met. Once SHAs are designated in rule, resource managers may address gaps in existing management and take steps to prevent further alteration of the system as a whole. Thus, the necessary protections may go above and beyond current measures designed to protect habitat. Even before designation in rule, conservation agencies may incorporate candidate SHAs in their site selection process for acquisition, enhancement or restoration projects.

Four regions have been delineated for analysis and development of SHAs (Figure 8). As of May 2018, SHAs in all four regions have been identified and approved by the NCMFC. Regions 1, 2, 3, and 4 were presented and approved by the NCMFC in January 2009, November 2011, November 2014, and May 2018, respectively (Figure 9).

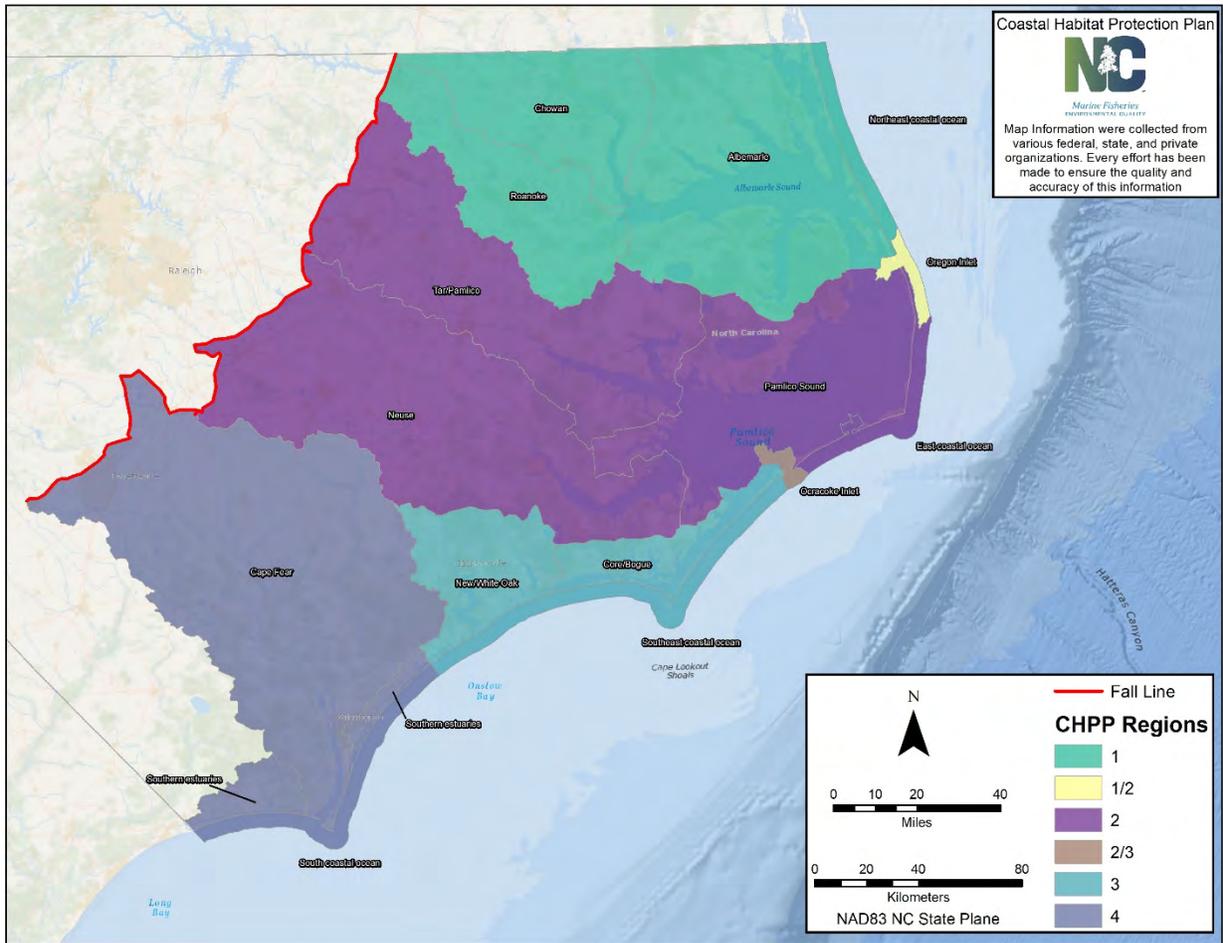


Figure 8. The CHPP region and subregion boundaries (based on USGS hydrologic units), along with the fall line separating Coastal Plains and Piedmont physiographic regions.

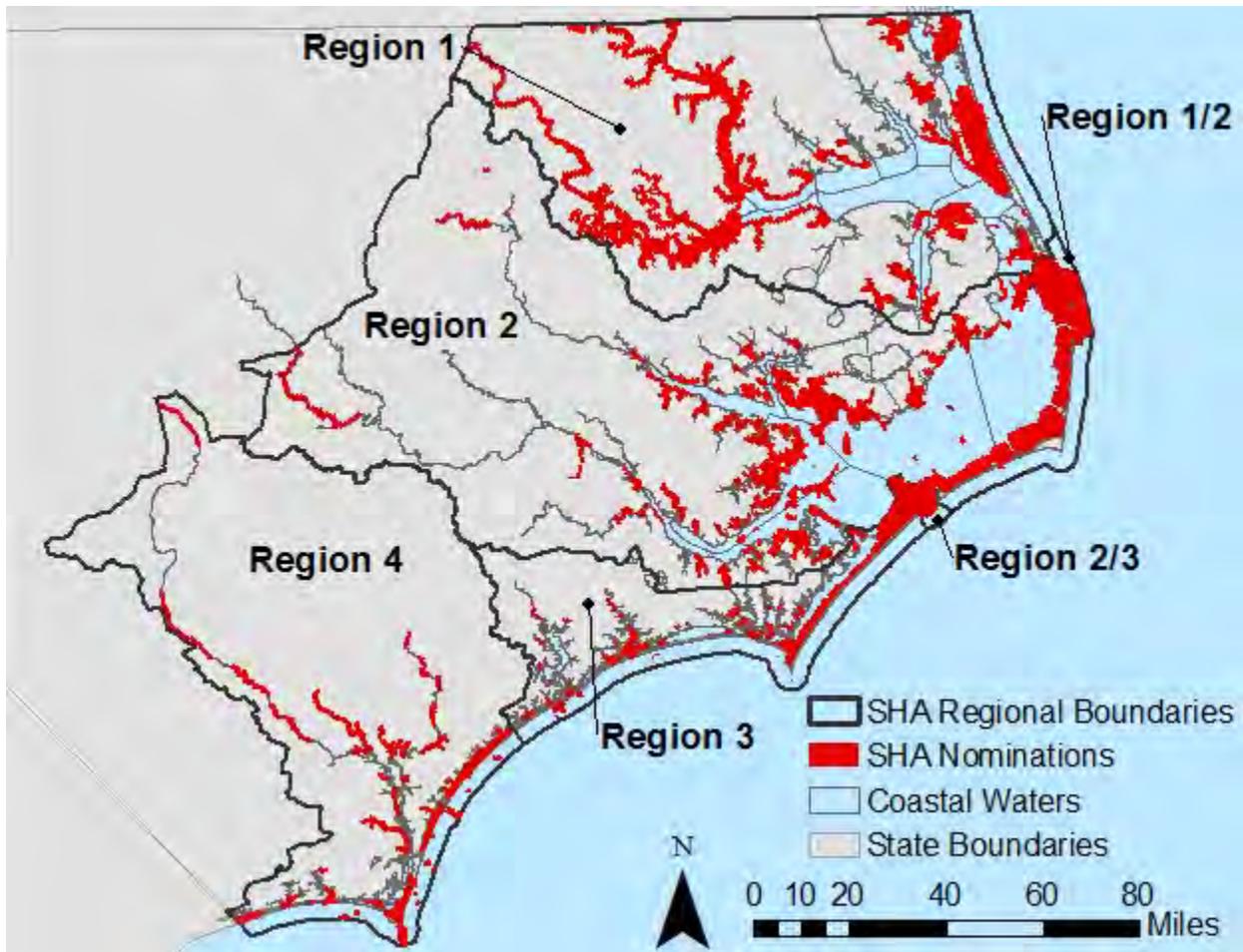


Figure 9. CHPP Regions 1, 2, 3, and 4 strategic habitat area nominations presented and approved by the Marine Fisheries Commission.

Section 2: Threats Assessment

Barriers to Migration Inventory and Assessment

The 2020 Atlantic States Marine Fisheries Commission’s American Shad Stock Assessment and Peer Review Report provides an extensive review of available literature and discussion on the topic of fish passage (ASMFC 2020). Specifically, it highlights the issues with lack of evaluation and performance from decades-old approaches, facilities designs/operations that are not effective, and therefore cannot reasonably be expected to achieve management and restoration goals without significant changes. The Assessment Report also provides an important quantitative modeling approach examining shad habitat and passage barriers, and the need to address status quo fish passage performance. The impacts of these barriers and status quo passage are described and also modeled as effects on spawner population size under three scenarios, 1) no barriers, 2) first barrier with no passage, and 3) realistic fish passage performance measures applied to barriers (e.g., upstream passage efficiency of 50%).

The Assessment Report used standardized data and modelling approaches that quantified the impacts of barriers and fish passage as significant in all three management areas examined based on shad life history and habitat (New England, Mid-Atlantic, and South Atlantic). The

assessment determined that overall, dams completely or partly block nearly 40% of the total habitat once used by American Shad. The model results of the “no barriers” scenario yielded an estimated spawner production potential 1.7 times greater than that yielded by the scenario assuming no passage at the first barrier: 72.8 million versus 42.8 million fish. The results of the third model scenario, which applies “realistic” (i.e., current) fish passage efficiencies, resulted in a gain of less than 3 million fish. Conclusions include “losses in (spawner production) potential are significant in each state and region.” The Assessment Report provides a strong justification for the need and benefits of requiring improved fish passage performance measures. Additionally, meeting such improved passage performance standards is now an achievable goal given the current state of knowledge on fish behavior, swimming performance, and fish passage engineering expertise.

Dams - CHPP section 9.2.1; 9.2.2; 9.2.3; 9.2.5

The majority of dams in North Carolina occur in the upstream portions of estuaries, rivers, and streams. In the coastal plain, dams are most abundant in the upper reaches of the Cape Fear, Neuse, Tar-Pamlico, Roanoke, Chowan, and Yadkin-Pee Dee watersheds. These structures primarily impact anadromous fish and the catadromous American eel spawning migrations, (Figures 2-5). Eggs and larvae are less likely to survive if passage to their historical spawning areas is obstructed by dams or other alterations (Moser and Terra 1999).

In the coastal plains portion of CHPP Region 1, approximately 18% (2,369 miles) of National Hydrologic Dataset (NHD) streams (13,070 miles) appear blocked by an impoundment, based on strategic coastal habitat assessment results. The Chowan subregion of Region 1 had the largest percent of dam-obstructed streams at 38% (Table 1).

Table 1. Number of documented obstructions (e.g., dams, locks, culverts) in coastal plains portion of CHPP regions.

Data sources: Virginia Game and Inland Fisheries (1983 data), Collier and Odum (1989), Moser and Terra (1999), NCDOT (2003 data), NCDWR (2003 data), and USACE obstructions inventory (2009 data) 1.

CHPP Region	Subregion	Dam/impoundment	Beaver dam*	Lock*	Storm gate*	Vegetation*	Culvert (unspecified)	Pipe culvert	Box culvert**
1	Albemarle	2	0	1	4	2	33	39	3
	Chowan	95	1	0	0	0	25	46	5
	Roanoke	28	0	0	0	0	29	32	0
	TOTAL	125	1	1	4	2	87	117	8
2	Neuse	113	0	0	0	0	119	139	1
	Pamlico Sound	1	0	0	0	0	15	9	0
	Tar/Pamlico	73	0	0	0	0	95	68	0
	TOTAL	187	0	0	0	0	229	216	1
3	Core/Bogue	1	0	0	0	0	0	8	0
	New/White Oak	5	0	0	0	0	8	24	0
	TOTAL	6	0	0	0	0	8	32	0
4	Cape Fear	191	0	0	0	0	104	176	1
	Southern estuaries	3	0	0	0	0	1	6	0
	TOTAL	194	0	0	0	0	105	182	1
ALL	TOTAL	512	1	1	4	2	429	547	10

¹ Note: Structures duplicated in different datasets were consolidated into one dataset.

* Collier and Odum (1989) only

** Moser and Terra (1999) only

Additional information on aquatic barriers in North Carolina can be found using the Southeast Aquatic Barrier Prioritization Tool (<https://connectivity.sarpdata.com/>). The Southeast Aquatic Resources Partnership has compiled an inventory and living database of dams, culverts, and other road crossings and other road crossings for 14 states in the southeast. While the information on barriers is not complete or comprehensive across the region, a large portion of North Carolina's aquatic barriers have been inventoried. The inventory directly supports prioritization of barriers by including metrics that describe network connectivity, landscape condition, and presence of threatened and endangered aquatic organisms.

Other Physical Structures - CHPP section 9.2.4

Based on analysis of NCDEQ and NC Department of Transportation (NCDOT) records, it has been estimated that the state loses, on average, about 500 acres of wetlands per year, mostly from road construction (see "Culverts and Road Fill" section of the Hydrological Alterations chapter for more information). Road construction over rivers, streams, or wetlands often involves blockage of a portion of the original stream channel and floodplain. Bridges may cross over the water or culverts may be constructed under the road, depending on the size of stream and associated wetlands. In the past, bridges were constructed by filling the adjoining wetlands and creating a narrow channel for water passage.

Altered Water Quality and Quantity - CHPP section 10.2

Besides degrading water quality, modifications to normal flow conditions (e.g., stream blockages, water withdrawals, droughts, or discharges) can negatively impact anadromous fish migrations, including American shad.

Water Withdrawals Inventory and Assessment - CHPP Section 9.3.1

Water is withdrawn from surface and ground waters for multiple purposes. Surface water is withdrawn for industrial uses (such as cooling water for nuclear and fossil fuel power plants), municipal water supply, crop irrigation, and other uses. Thermoelectric power generation accounts for the greatest amount of surface water withdrawals followed by public water supply, irrigation, industrial, and aquaculture withdrawals in the CHPP regions.

Specific information regarding the type and quantity of water withdrawals for each basin is catalogued by the NC Division of Water Resources (NCDWR 2001).

Toxic and Thermal Discharges Inventory and Assessment - CHPP Section 10.2.2; 10.2.3; 10.2.4; 10.2.5

Both direct (point source) and indirect (non-point source) discharges occur in the river systems that support American shad, and can contain a variety of stressors that are generally dependent on adjacent land use. Common stressors contained in both point and non-point discharges are nutrients and toxins (e.g., chlorinated hydrocarbons).

Several of these major rivers flow into estuarine environments that are characterized by slowly moving, poorly flushed waters with high level of nutrients, which offer ideal conditions for various algae, fungi, and bacteria to thrive. Toxins can exist in the water column as well as adhere to bottom sediments. General information regarding discharges of nutrients and toxins is presented in the CHPP with specifics for each river basin. Additional information regarding North Carolina water quality data assessments and impaired waters list can be found on the NC Division of Water Resources (NCDWR) website (<https://deq.nc.gov/about/divisions/water-resources/planning/modeling-assessment/water-quality-data-assessment/integrated-report-files>).

Channelization and Dredging Inventory and Assessment - CHPP Section 9.3.2; 8.2.3

Water Column, wetlands, SAV, and soft bottom, all of which are critical to American shad stocks, are directly threatened by dredging and channelization. Not only will dredging directly affect American shad stocks, the sedimentation and turbidity associated with it will have adverse impacts on American shad.

Much of NC's estuarine waters are shallow and these shallow waters are where most structured habitats like wetlands, SAV, and shell bottom occur. Dredging can consist of deepening existing shallow water habitat or creating new waters from upland in the form of canals, boat basins, marinas, or ditches. This is generally done for the purpose of navigation or drainage for flood or mosquito control. The latter is no longer permitted.

Land Use Inventory and Assessment - CHPP Section 1.7.1; 10.1

Land use and land cover vary from North Carolina's oceanfront shoreline to the freshwater upstream limit of American shad in coastal river systems. Statewide the dominant land cover is forest, followed by agriculture, and developed land. In the flat and relatively low elevation of the coastal plain, marsh and forested wetlands are very abundant. Forest land can be upland or

wetland and can be managed (silviculture) or natural (undisturbed). Forestry and agriculture are the biggest industries in terms of land cover in the coastal plain.

Land cover and water quality within a watershed are closely linked. The impact of land uses on fish habitat and water quality depends on the location of the land uses in the watershed as well as local weather conditions (rainfall, winds etc.). For additional information on land use change data please refer to the NOAA Coastal Change Analysis Program (C-CAP) 2016 Regional Land Cover and Change Data Set (<https://coast.noaa.gov/digitalcoast/data/>).

Atmospheric Deposition Inventory and Assessment - CHPP Section 10.3.3

The effect of atmospheric deposition on water quality is difficult to trace. Sources of atmospheric pollutants include vehicle exhaust, industrial emissions, and waste from animal operations (Walker et al. 2000; USGS 2003). Atmospheric deposition was the source implicated in 7.9% of impaired coastal draining streams in North Carolina (NCDWQ 2006). The greatest number of streams impaired from atmospheric deposition occurred in the Roanoke River Basin. A significant portion of nutrient pollution has also been attributed to atmospheric deposition.

Climate Change Inventory and Assessment

On October 29, 2018, North Carolina Governor Roy Cooper issued Executive Order No. 80 (EO80), which outlines North Carolina's commitment to addressing climate change and transition to a clean energy economy. The North Carolina Climate Science Report (NCCSR) supports Governor Cooper's EO80 by providing an independent peer-reviewed scientific contribution to the EO80. The NCCSR is a scientific assessment of historical climate trends and potential future climate change in North Carolina under increased greenhouse gas concentrations (<https://ncics.org/programs/nccsr/>). The report was prepared independently by North Carolina-based climate experts and an advisory panel was formed to provide oversight and review of the report. The report underwent several rounds of review and revision, including an anonymous peer review organized by NOAA's National Centers for Environmental Information (NCEI). The NCCSR was released in March 2020 and revised in September 2020 to enhance accessibility of the report.

The report found that large changes in North Carolina's climate are very likely to occur by the end of this century (Kunkel *et al* 2020). North Carolina annual average temperature has increased by about 1.0°F since 1895, less than global average (Kunkel *et al* 2020). However, 2009-2018 represent the warmest 10-year period on record in North Carolina, averaging about 0.6°F warmer than the warmest decade in the 20th century (1930-1939; Kunkel *et al* 2020). Sea level along the northeastern coast of North Carolina has risen about twice as fast as the southeastern coast, averaging 1.8 inches per decade since 1978 at Duck, NC, and 0.9 inches per decade since 1935 at Wilmington, NC (Kunkel *et al* 2020). The report predicted that by the end of the century all of the state's coast will experience disruptive coastal flooding. While the report found no long-term trend in annual total precipitation, there is an upward trend in the number of heavy rainfall events (3 inches or more in a day), from 2015-2018 (Kunkel *et al* 2020).

Competition and Predation by Invasive and Managed Species Inventory and Assessment - CHPP 11.1

There is widespread documentation that some non-native species can out-compete native species, altering the established ecosystem, habitat, and eventually water quality (Mallin *et al.* 2001, Burkholder *et al.* 2007).

The most troublesome submerged aquatic plant species in low-salinity estuarine waters are Eurasian watermilfoil (*Myriophyllum spicatum*) and hydrilla (*Hydrilla verticillata*). It is possible for Eurasian watermilfoil and hydrilla to become thick dense beds that will out compete native SAV species. The presence of these two species may remove critical habitat by “choking” out native species or fish kills may arise due to low dissolved oxygen levels. Hydrilla has been documented in many of the North Carolina coastal rivers and the Albemarle Sound.

The NCDEQ is charged with the regulation of noxious weeds in the Aquatic Weed Control Act of 1991 (Article 15 113A-220). By virtue of the regulations created following the act (T15A NCAC 02G .0600), NCDWR implements the Aquatic Weed Control Program (AWCP), which focuses primarily on non-native invasive species in freshwater lakes, ponds, and rivers. Weed control activities in coastal waters are primarily focused on Eurasian watermilfoil. Control activities target areas where native species are not the dominant species based on site assessments (R. Emens NCDWR, personal communication 2009).

Both the blue catfish (*Ictalurus furcatus*) and flathead catfish (*Pylodictis olivaris*) are nonnative catfish species in coastal North Carolina that are known to prey on native fishes including river herring and American shad. In North Carolina flathead catfish do not target native species, but they are opportunistic feeders eating whatever becomes available (Pine *et al.* 2005) but both species have been documented to consume river herring (Schloesser *et al.* 2011). At the current time, the blue catfish population is expanding in the Albemarle Sound and its tributaries but the extent of its effect on river herring and American shad is unknown. Flathead catfish have yet to be documented in the Albemarle Sound region, but they are present in all other river basins, including some coastal waters, in the state (NCDMF and NCWRC unpublished data). While the impact of blue catfish and flathead catfish predation on American shad in North Carolina is unknown, we assume American shad are just as vulnerable as river herring due to the opportunistic feeding behavior of these invasive species. Neither the NCDMF nor the NCWRC has regulations to restrict harvest of invasive catfishes in North Carolina coastal rivers and sounds in attempts to control their populations.

Section 3: Habitat Restoration Program

Barrier Removal and Fish Passage Program

Chowan Watershed

In the Chowan watershed, there is one hydropower dam on the Meherrin River, and one on the Nottaway River (Baskerville Mill Dam), both in Virginia. In addition to dams found on mainstem rivers, numerous smaller mill dams are found on creeks throughout eastern North Carolina. For example, Collier and Odom (1989) reported three such dams within the Chowan River basin on Bennetts, Indian, and Rockyhock creeks (Figure 2). The dams on mainstem and tributary portions of the Chowan drainage basin form the upstream boundaries of some documented anadromous fish spawning habitat in North Carolina and Virginia. Although there is a fish passage structure, the upstream boundaries include the Emporia Dam on the Meherrin River in Virginia (Collier and Odom 1989). The structure at the dam does not effectively pass fish upstream. Removing or bypassing these dams would open access to many miles of potential spawning habitat for anadromous species including American shad. Recent fish passage improvements in the Chowan watershed include fish ladders at Merchant’s Millpond on Bennett’s Creek and Dillard’s Millpond on Indian Creek (Mike Wicker USFWS, personal communication, 2005), but these improvements are only beneficial for river herring.

Roanoke River

Currently, numerous large and small dams are present in the Roanoke River Basin. Roanoke Rapids Dam at river kilometer (rkm) 220 (river mile 137) is the lowermost dam on the mainstem of the river. Roanoke Rapids Dam impounds the river to Gaston Dam at rkm 233 (river mile 145). Gaston Dam impounds the river to rkm 274 (river mile 170), below Kerr Dam at rkm 288 (river mile 179). Kerr Dam impounds the river up the Dan River to rkm 332 (river mile 206), and up the Staunton River to rkm 341 (river mile 212; Laney et al. 2001). State and federal fisheries management agencies in North Carolina and Virginia finalized negotiations with Dominion/NC Power for relicensing of the Gaston and Roanoke Rapids lakes hydroelectric dams through the Federal Energy Regulatory Commission (FERC) in 2005. Among the mitigative measures required by relicensing was a long-term, well-funded, and coordinated program to restore American shad in the Roanoke River basin. Measures outlined in this effort included improvements in hatchery production of fry, continued intensive monitoring of fry stocking success upstream and downstream of the mainstem reservoirs, and an assessment of American shad population size, using hydroacoustic techniques, as it pertains to providing upstream passage facilities and fulfilling the prescription for fish ways provided by NMFS. The Diadromous Fishes Restoration Technical Advisory Committee (DFRTAC), comprised of Dominion staff and state and federal resource managers, advises implementation of Dominion's settlement agreement. Due to numerous studies showing ineffective downstream passage of stocked fish and continued low spawning population estimates, the DFRTAC has delayed the design and construction of American shad passage facilities at Roanoke Rapids Dam as prescribed in the settlement agreement. Nevertheless, the fish ways prescription and the settlement agreement established a process for providing American shad access to spawning habitat in the upper Roanoke River that can be implemented when conditions are appropriate.

Tar/Pamlico River

The Rocky Mount Mills Dam is the lowermost dam on the Tar River that obstructs migration of striped bass, American shad, Atlantic sturgeon, hickory shad, and blueback herring (Collier and Odom 1989). The dam was constructed on the Tar River near the City of Rocky Mount in approximately 1816. The dam provided power for gristmill, sawmill, and textile industries. In 1949, hydro-electric turbines were installed, and the dam produced electricity in addition to the textile manufacturing (GEO 2019). The textile mill closed in 1996, but the hydropower operation continued through approximately 2013 (EPA 2019). The current owners of the dam and associated hydropower facility plan to refurbish the turbines and resume power generation in the future. Operation for the benefit of fish spawning and providing fish passage will not be required because the dam is not regulated by FERC; however, the owners have been receptive to fish passage ideas and seem willing to cooperate with beneficial flows (Wilson Laney, USFWS ret., personal communication). Rocky Mount Mills Dam will continue to represent a barrier to American shad migration on the Tar River until its removal or development of fish passage.

Neuse River

The first blockage in the Neuse River is Falls of Neuse Dam at rkm 314 (river mile 195). A substantial amount of mainstem habitat was restored in 1998 with the removal of the Quaker Neck Dam near Goldsboro (Bowman and Hightower 2001). In 2017, the Milburnie Dam rkm 295 (river mile 183) was removed providing access to more than ten kilometers (six miles) of potential spawning habitat. Removal of Milburnie Dam also allows the USACE some latitude to provide a stable flow regime for the Neuse.

Little River, a Neuse River tributary, has had three low-head dams removed since 1998. Cherry Hospital Dam, Rain Mills Dam, and Lowell Mill Dam have been removed and have reconnected 82 river kilometers (51 river miles) of Little River to the Neuse River and 237 river kilometers (147 river miles) including Little River tributaries. Raabe and Hightower (2014) estimated that 24-31% of American shad and 45-49% of gizzard shad migrated past the former Lowell Mill dam site in 2009 and 2010. A partially removed dam, which provides for a back-up water intake structure for the city of Goldsboro, still exists just upstream of the former Cherry Hospital Dam. This remaining structure appears to impede the upstream migration of American shad and gizzard shad, blocking some individuals and delaying others (Raabe and Hightower 2014).

Cape Fear River

In the Cape Fear River, the lowermost obstructions to migration are the three locks and dams located within the Coastal Plain operated by the USACE. Above the final lock, Buckhorn Dam at rkm 316 (river mile 196) prevents further migrations to potential upstream spawning habitat except during extreme flood events. The Cape Fear River may provide the best opportunity for remediation of obstructions. In November 2012, the USACE completed construction on a rock ramp fish passage for the lower most lock and dam. State and federal natural resource agencies, along with university and non-governmental organizations, have partnered to develop a Cape Fear Basin Action Plan for Migratory Fish (<http://www.habitat.noaa.gov/protection/capefear/pdf/CapeFearActionPlan.pdf>).

Telemetry studies conducted to evaluate American shad usage of the rock arch fishway indicate American shad passage efficiency at the Lock and Dam 1 (LD-1) fishway ranged 53–65% and was consistent with prior estimates from locking procedures (Raabe et al. 2019). Electrofishing surveys corroborate the telemetry studies, as electrofishing catch rates have increased at the upper two locks and dams and decreased at LD-1 over the last five years. These results indicate American shad are readily passing LD-1. With presumed historic spawning grounds, upstream of Lock and Dam 3 (LD-3), substrate was strategically placed below Lock and Dam 2 (LD-2) in 2013 to increase the potential spawning habitat for anadromous fish that pass the rock arch fishway but fail to navigate the lockage system. Locking at LD-1 has ceased at this point but continues for LD-2 and LD-3 to facilitate fish passage. American shad spawning activity has been observed by Commission staff (Bennett Wynne, NCWRC retired, personal communication), and American shad eggs have been collected just downstream of LD-2 (Dawn York, Cape Fear River Partnership, personal communication). Therefore, fish that migrated to LD-2 but failed to migrate farther upstream could reproduce and benefit from the habitat enhancement efforts. In 2016, NCWRC staff documented higher egg densities below LD-3 compared to other locks and dams (Morgeson and Fisk 2018). The Cape Fear River Partnership, including local, state, and federal agencies, as well as private groups, continues to plan fish passage enhancement projects on the remaining locks and dams on the main stem Cape Fear River.

Following the construction of the fish passageway at LD-1, natural resource agencies have advocated for removal or construction of fish passage structures at LD-2 and LD-3. Restoration efforts through removal or modification of dam structures that impede migration of anadromous fish should remain a high priority to continue in North Carolina, focusing on the lowermost structures in rivers or streams, and advancing upstream. In particular, the Cape Fear system, LD-2 should be a high priority, since striped bass, shortnose sturgeon, and Atlantic sturgeon have not recovered. In late 2015, the North Carolina General Assembly approved \$250,000 to be used towards the engineering and design of a fish passage at Lock and Dam 2. The funds require a 50/50 match of non-federal monies. Fundraising for the matching funds is currently

under way by the Cape Fear River Partnership. However, the USACE authorized a disposition study in 2019, and the fate of the dams, including continued ownership by the USACE and any future improvements, is in question pending the study.

Hatchery Product Supplementation Program

American shad fry reared at the USFWS Edenton National Fish Hatchery (ENFH) and at the NCWRC Watha State Fish Hatchery have been stocked annually into the Roanoke River since 1998. This restoration project was initiated by NCWRC, and although it was originally funded by the North Carolina Department of Transportation as mitigation for aquatic habitat damages resulting from highway bridge construction on the Roanoke River, continued American shad stocking efforts have primarily been funded by Sport Fish Restoration Funds and Dominion Energy through their FERC settlement agreement requirements. Annual production and stocking information can be found in North Carolina's annual Shad and River Herring Compliance reports. In 2019, however, NCWRC and other program partners decided to temporarily halt the Roanoke River restoration program for at least three years due to growing concerns about high hatchery contribution and decreasing genetic diversity without population growth. A similar, but smaller scale American Shad restoration program began in the Neuse River in 2012 to supplement the wild population by stocking fry produced from one spawning tank of approximately 100 broodfish each year. The Neuse River restoration program was also stopped in 2019.

Annual contribution of hatchery-origin American shad to the Roanoke River and Neuse River populations is evaluated for multiple cohorts of returning adults during the spring spawning run. Fin clips from adult American shad are collected during spawning stock surveys, and broodfish are also evaluated for potential hatchery contribution of stockings from previous years. Parentage-based tagging analysis using genetic, microsatellite markers has been used to examine adult and juvenile fin clips for hatchery origin since 2010, and OTC was used in prior years. Although stockings were halted in 2019, evaluation of previously stocked cohorts will continue.

Water Quality Improvement Program-CHPP 14

One of the four major goals of the CHPP is "Enhance and protect water quality" and significant cooperation among agencies has occurred in pursuit of this goal. The most recent CHPP Implementation Plan 2018-2020, as well as recent annual reports can be found on the CHPP website (<http://portal.ncdenr.org/web/mf/habitat/chpp/07-2020-chpp>). The implementation plans outline specific items regarding water quality while the annual reports provide details on progress on items contained in the Implementation Plan. A separate improvement plan for water quality is not needed because the implementation plans outline specific actions to address water quality.

In 2010, the North Carolina General Assembly directed the NCDEQ to develop basinwide hydrologic models for all 17 river basins in North Carolina (<https://deq.nc.gov/about/divisions/water-resources/water-planning/modeling-assessment/basinwide-hydrologic-modeling>). For long term planning, NCDEQ uses hydrologic models for evaluating potential impacts of proposed projects with new or increased water withdrawals within the basin as well as interbasin transfers. Local stakeholders as well as DEQ use these models to plan for increased water use due to growth and to evaluate the effects of operational and regulatory constraints during a drought condition. To date basinwide models have been completed for the Cape Fear-Neuse river (combined), Roanoke River, and Tar River.

The NCDWR is actively working to develop appropriate nutrient criteria for the waters of the state. The NCDWR's goal is to develop scientifically defensible criteria based primarily on the linkage between nutrient concentrations and protection of designated uses. The criteria for each water body will be coordinated with other water bodies to ensure consistency across the state and protect downstream uses. The nutrient criteria development plan for 2019 can be found on the NCDWR website (<https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/nutrient-criteria-development-plan>). Nutrient criteria development efforts will be directed to the three specific water body types: 1) reservoirs/lakes, 2) rivers/streams and 3) estuaries. Currently, the plan is using the Albemarle Sound as the pilot water body for estuaries. The timeline for development and adoption of nutrient criteria in the 2019 plan is 2025. Adoption of nutrient criteria statewide is anticipated by 2029.

Habitat Improvement Program-CHPP 14

Similar to the Water Quality Improvement Program, the CHPP Implementation Plan fills the role of a Habitat Improvement Program. Two of the four major CHPP goals are directly related to habitat protection and improvement: "Identify, designate and protect strategic habitat areas" and "Enhance habitat and protect it from physical impacts." The CHPP Implementation Plan 2018-2020 details the component of and progress towards several efforts aimed at improving fisheries habitat in North Carolina (<http://portal.ncdenr.org/web/mf/habitat/chpp/07-2020-chpp>). A separate improvement plan for habitat improvement is not needed because the implementation plans outline specific actions to address habitat concerns.

In 2010, American Rivers initiated a dam removal program in North Carolina. This organization has been working with state and federal agencies to prioritize which dams should and can be removed. While creating this list, American Rivers has been actively trying to obtain funding to remove dams. In partnership with the American Rivers organization and other state and federal councils and fish and wildlife agencies, the Southeast Aquatic Resources Partnership has been working with partners cross 14 southeast states to inventory aquatic barriers since 2013. Recently, the Southeast Aquatic Resources Partnership launched the Aquatic Barrier Prioritization Tool (<https://connectivity.sarpdata.com/>). This interactive tool contains a living database and GIS assessment of aquatic barriers in the southeast. This information allows partners to prioritize dams and road-stream crossings for potential removal or remediation based on ecological metrics. Researchers at NCDEQ, NCWRC and East Carolina University (R. Rulifson and J.P. Walsh) have contributed to the assessment in estimating the acreage of habitat gained by the removal of the first and second obstructions on North Carolina coastal rivers.

Additionally, staffs from NCDMF and NCWRC, as well as other federal and state agencies participate in several cooperative efforts to improve fish passage, including the ASMFC Fish Passage workgroup.

Project Permit/Licensing Review and Minimization Programs-CHPP 14

During the 2008-2009 fiscal year the NCDMF received approval for two grant funded position dedicated to NC Division of Coastal Management (NCDCM) permit review. NCDMF through NCDCM participates in an extensive permit review process on behalf of 15 federal and state agencies. NCDMF is specifically authorized by state statute to review and comment on permits that may impact public trust resources and has established a set of internal guidelines for staff in order to maintain a consistent review process. Dedicated staff conduct reviews on permits related to coastal development, while programmatic fisheries staff take the lead in reviewing federal permits for particular species.

In 2009, the NCMFC approved a compensatory mitigation policy that was incorporated into the "Policies for Protection and Restoration of Marine and Estuarine Resources and Environmental Permit Review and Commenting." Based on evolving understanding of the needs of compensatory mitigation to protect and enhance the quality of coastal waters and watersheds, the focus and goals of compensatory mitigation should allow an array of options to be applied. The NCMFC has delegated its permit commenting authority to its Habitat and Water Quality Standing Advisory Committee (Committee) for the sake of efficiency and effectiveness.

State and federal laws charge the NCWRC with protecting, managing and conserving aquatic, wetland and upland habitats for the benefit of fish and wildlife populations. The Habitat Conservation Program implements this mandate based upon the NCWRC's Policies and Guidelines for Conservation of Wetlands and Aquatic Habitats. The NCWRC Habitat and Conservation Program reviews proposed projects statewide and evaluates the potential environmental threats associated with each project. The program recommends project design modification to minimize adverse environmental impacts and recommends mitigation to compensate for unavoidable impacts. A large portion of the coastal region permit review is associated with shoreline stabilization, piers construction, marina development and small channel dredging.

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**South Carolina Department of Natural Resources
Georgia Department of Natural Resources**

American Shad Habitat Plan for the Savannah River



Submitted to the Atlantic States Marine Fisheries Commission as a requirement of Amendment 3 to the Interstate Management Plan for Shad and River Herring

Approved: February 6, 2014

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Savannah River American Shad Habitat Plan

submitted by

Georgia and South Carolina

Habitat Assessment

Tributaries of the Savannah River begin in the Appalachian Mountains in Georgia, North Carolina, and South Carolina. The Savannah River begins at the confluence of the Tugaloo River and the Chattooga River and flows 506 kilometers (km) across the piedmont and coastal plain before emptying into the Atlantic Ocean. The river serves as the border between Georgia and South Carolina throughout its entire length and has a watershed of approximately 27,255 km². Tidal influence typically extends to km 56 and the fresh/saltwater interface occurs approximately 22 km upstream from the mouth of the river.

There are no physical obstructions to the amount of historical estuarine habitat available to migrating adults or young-of-the-year fish in the Savannah River. However, major river channel modifications for shipping and commerce have occurred since colonial times. The impacts from these actions have altered salinity, decreased dissolved oxygen at depth, increased flushing rates in the lower estuary, and reduced freshwater tidal wetlands (Reinert 2004). For example, the installation and operation of a tide gate on the Back River channel and harbor deepening projects altered salinity and dissolved oxygen in a section of the lower river. Due to these impacts, the tide gate was removed in 1991, thus restoring a more natural flow regime. A major project to deepen the harbor in Savannah, GA to accommodate larger ships in the future was partially completed in 2018-2019.

The first barrier to upstream migration on the Savannah River is the New Savannah Bluff Lock and Dam (NSBLD) located at km 301 near Augusta, Georgia. The lock at NSBLD was designed for navigation and initially provided very limited fish passage. In the late 1980s, identification and documentation of more efficient passage methodologies were completed at the NSBLD and were implemented annually until 2014, when the lock was permanently closed. Consequently, the NSBLD is now the first true barrier with no dedicated fish passage. The next true barrier with no dedicated fish passage is the Augusta Diversion Dam located at km 333.

Historic Habitat

American shad had access to the entire Savannah River and its tributaries throughout the 27,255 km² watershed (South Carolina's portion of the watershed occupies 11,864 km²). According to Welch (2000), the only record that could be found describing the inland distribution of American shad was from Stevenson's 1899 report where he firmly places the historical inland migration of American shad at "Tallulah Falls, 617 km by the river course from the sea".

Current Useable Habitat

Spawning - American shad begin spawning in tidal freshwater near km 64 (McCord 2003) and have about 237 km of suitable riverine channel habitat for spawning in the Savannah River below the New Savannah Bluff Lock and Dam. Between the late 1980's and 2014, efficient passage methodologies were implemented annually allowing American shad access to an additional 32 km of the Savannah River to the base of the Augusta Diversion Dam (km 333), the first barrier with no dedicated fish passage. This has changed with the permanent closure of the lock at NSBLD in 2014.

Rearing - Suitable rearing habitats are similar to the listed waterways for suitable spawning habitat with the addition of 10,031 ha of estuary in the Savannah River basin (DHEC).

Threats Assessment

a. Barriers to migration inventory and assessment

There are currently 6 dams on the main stem of the Savannah River. The US Fish and Wildlife Service developed a diadromous fish restoration plan (Hill 2005) for the middle Savannah River that includes establishing fish passage at the next two main stem Savannah River barriers and barriers within the Stevens Creek tributary system. Additionally, plans to improve fish passage at NSBLD have been developed as a part of the mitigation plan for deepening the Savannah shipping harbor and would enhance passage to approximately 33 km of the Savannah River below the Augusta diversion dam. If fully implemented, approximately 77 km miles of main-stem river, and 72 km of tributary reaches would be made available through provision of fish passage at the Augusta Diversion Dam and Stevens Creek Dam. This includes approximately 2,917 acres of potential new habitat. The lowermost dam in the Savannah River is the New Savannah Bluff Lock and Dam (NSBL&D at km 301).

Name	Purpose	Owner	Height (ft.)	Width (ft.)	Length (ft.)	Impoundment size	Water storage capacity	Location	River Kilometer	Fish Passage	Method
NSBL&D	Hydro	USACE	~25	~45	4109	2,866 acre	30,893 acre/ft.	34.982947°N/79.877540°W	301	Yes	Lock

Action 1: Improve fish passage at the New Savannah Bluff Lock and Dam

Regulatory Agencies/Contacts: The United States Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), United States Army Corps of Engineers (USACE), Georgia Department of Natural Resources (GA DNR), South Carolina Department of Natural Resources (SC DNR), City of Augusta, and federal and state legislators.

Goal/Target: Construct a fishway that will effectively pass diadromous fish species.

Progress: Mitigation plans for expansion of the Savannah River harbor included construction of a new fish passage system at NSBLD. USACE completed design work for the new fish passage, however changes to the NMFS biological opinion dredging has already been initiated in the harbor. These plans call for the construction of a series of terraced rock ramps on the South Carolina side of the river. During periods of low flow, the gates could be closed to divert the total flow of the river to the off-channel rock ramp. Legal action is currently underway, thus all NSBLD changes are being suspended until such legal measures are decided.

Cost: \$30,000,000

Timeline: Dependent upon funding

Action 2: Fish passage at the Augusta Diversion Dam and Stevens Creek Dam

Regulatory Agencies/Contacts: The USFWS, NMFS, USACE, GA DNR, SC DNR, City of Augusta, and federal and state legislators.

Goal/Target: The National Marine Fisheries Service (NMFS) goal is to concurrently initiate construction and operation of fishways at both the Augusta Diversion Dam and the Stevens Creek Dam to ensure fish passage above both projects, allowing access to the main-stem Savannah River, and major tributaries.

Progress: The relicensing of the Augusta Diversion Canal and Stevens Creek projects provided an opportunity to consider diadromous fish needs and resulted in a fishway prescription from the Secretaries of Interior and Commerce. Upstream passage at Stevens Creek Dam is required following the construction of a fishway at the Augusta Diversion Dam.

Augusta Diversion Dam

In August 2004 the USFWS and NMFS submitted a preliminary fishway prescription for the Augusta Canal Hydropower Project that included a vertical slot fishway on the Georgia side of the river. Based on comments received from the City of Augusta, and additional evaluation and review by the USFWS and NMFS, the fishway prescription was modified to include a vertical slot fishway on the South Carolina side of the Savannah River. Negotiations between the USFWS and NMFS and project operator are still ongoing and construction of the fishway has not been initiated.

Stevens Creek Dam

The Section 18 prescription in the current license for the Stevens Creek project includes a requirement to refurbish the navigation lock, which will be operated using attraction flows or other fish attraction mechanisms to provide a minimum of 30 lockages during the shad migration season. The prescription requires construction and operation of the USFWS and NMFS approved final fishway design following construction of fish passage facilities at the Augusta Diversion Dam. The USFWS and NMFS also reserve the authority to further evaluate alternative fishway designs.

Cost: Unknown

Timeline: Unknown

Action 3: Fish passage at the Stevens Creek Mill Dams

Regulatory Agencies/Contacts: The USFWS, NMFS, USACE, SC DNR, dam owners, and federal and state legislators.

Goal/Target: Establish fish passage on the Stevens Creek tributary to the Savannah River following the establishment of fishways at the Augusta Diversion Dam and Stevens Creek Dam.

Progress: Two historical mill dams have been identified on the mainstem of Stevens Creek. Price's Mill Dam is located just downstream of SSR 138, and Parks Mill Dam is located just upstream of Hwy 23 both in Edgefield County, South Carolina. Although both dams are less than 15 feet in height and operate as run-of-river, each is a barrier to movements of anadromous and riverine fish. Future anadromous fish restoration efforts may include evaluating potential alternatives at the dams to provide fish passage to upstream habitats including access to Stevens Creek, Cuffytown Creek and Hard Labor Creek. Possible passage alternatives include full removal, notching, or construction of fish passage facilities.

Cost: Unknown

Timeline: Unknown

b. The following is a list of point source and nonpoint source activities that occur in the Savannah River

<i>Nonpoint Source Management Program</i>				
<i>Landfill Facilities</i>	<i>Status</i>	<i>Permit #</i>	<i>Section Number</i>	<i>Section Name</i>
SRS 632-G C&D LANDFILL	Solid Waste	065800-1901	03060106-08	(Savannah River)
USDOE WESTINGHOUSE SRS	Solid Waste	025800-1901	03060106-08	(Savannah River)
<i>Active NPDES Facilities</i>	<i>Facility Type</i>	<i>Permit Number</i>	<i>Section Number</i>	<i>Section Name</i>
BJW&SA/HARDEEVILLE CHURCH ROAD	MAJOR DOMESTIC	SC0034584	03060109-03	(Savannah River)
RINKER MATERIALS/DEERFIELD PIT	MINOR INDUSTRIAL	SCG730624	03060109-03	(Savannah River)
REED-HTI/SAVANNAH LAKE MINE	MINOR INDUSTRIAL	SCG731042	03060109-03	(Savannah River)
TOWN OF ALLENDALE WWTP	MAJOR DOMESTIC	SC0039918	03060106-09	(Savannah River)
CLAIRIANT CORP./MARTIN PLT	MAJOR INDUSTRIAL	SC0042803	03060106-09	(Savannah River)
USDOE WESTINGHOUSE SRS	MAJOR INDUSTRIAL	SC0000175	03060106-08	(Savannah River)
USDOE WESTINGHOUSE SRS	MAJOR INDUSTRIAL	SC0000175	03060106-08	(Savannah River)
USDOE WESTINGHOUSE SRS	MAJOR INDUSTRIAL	SC0000175	03060106-08	(Savannah River)
USDOE WESTINGHOUSE SRS	MAJOR INDUSTRIAL	SC0000175	03060106-08	(Savannah River)
USDOE WESTINGHOUSE SRS	MAJOR INDUSTRIAL	SC0000175	03060106-08	(Savannah River)
ECW&SA/WTP	MINOR INDUSTRIAL	SCG645036	03060106-06	(Savannah River)
KIMBERLY-CLARK CORP./BEECH ISLAND	MAJOR INDUSTRIAL	SC0000582	03060106-06	(Savannah River)
SCE&G/URQUHART STEAM STATION	MAJOR INDUSTRIAL	SC0000574	03060106-06	(Savannah River)
AIKEN PSA/HORSE CREEK WWTP	MAJOR INDUSTRIAL	SC0024457	03060106-06	(Savannah River)
US ARMY CORPS./LAKE THURMOND	MINOR INDUSTRIAL	SC0047317	03060106-01	(Savannah River/Stevens Creek Reservoir)

All point source and nonpoint sources that occur in the Savannah River are closely monitored by the South Carolina’s Department of Health Environmental Control (DHEC) and Georgia Environmental Protection Division (GAEPD). All discharges are held to water quality standards for the states. Therefore, it is highly unlikely these programs impact American shad migration and utilization of historic habitat. In addition, all programs are currently undergoing 316a to assess the likelihood of impingement or entrainment.

c. Toxic and thermal discharge inventory and assessment-none

d. Channelization and dredging inventory and assessment

The following is a list of historic dredging programs that occurred in the Savannah River System:

Start Date	River	DA Number	Action Typ	Project Na	County	Latitude	Longitude
11/4/1993	Savannah	SAC-1993-10125	SP	RAW WATER CANAL MODIFICATION	Jasper	32.342970	-81.130920

The Savannah River Harbor Expansion Plan (SHEP) includes dredging the Inner Harbor from a depth of 42-foot to a depth of 48-foot and could exacerbate low seasonal dissolved oxygen levels in this portion of the river.

Dissolved Oxygen-Low dissolved oxygen levels have been documented in a portion of the lower Savannah River, particularly during low flow periods in summer months.

Action 1: Mitigate potential impacts on dissolved oxygen levels due to SHEP.

Regulatory Agencies/Contacts: The USFWS, NMFS, USACE, GA DNR, SC DNR, Georgia Ports Authority, South Carolina Coastal Conservation League, Savannah Riverkeeper, and South Carolina Wildlife Federation, Savannah River Maritime Commission (SRMC) and the South Carolina Department of Health & Environmental Control (DHEC).

Goal/Target: Install oxygenation system to mitigate dissolved oxygen impacts of the SHEP.

Progress: The USACE has agreed to install and evaluate a “Speece Cone” oxygen injection system (Tetra Tech 2010) prior to commencement of dredging activities on the inner harbor. The final settlement agreement (USACE 2013) states the oxygen injection system must be operated and instream dissolved oxygen must be monitored continuously for a period of 59 days (2 lunar cycles). Continuous daily water quality monitoring must be conducted during this period at specified locations. If the Corps determines that the oxygen injection system test meets “success criteria”, it will commence inner harbor channel dredging. Following the installation of the entire oxygen injection system, a second analysis will be completed for a “start-up run”. The second round of testing will follow very similar protocols to the initial evaluation, but stipulates that at least one 29.5 day testing period (one lunar cycle) must occur in July, August, or September immediately following the installation of the oxygen injection system.

Following both the test run and “start-up run” the USACE, conservation groups, SRMC and DHEC each will independently evaluate the results report and other relevant

information to assess achievement of “success criteria”. DHEC, SRMC, and the conservation groups each reserves the right to take any appropriate action if its independent determination is that the “success criteria” has not been met, including but not limited to suspension, rescission, and revocation of the state approvals, initiation of an enforcement or other legal action, and/or termination of this agreement. The USACE does not waive any objection or defense to such actions, including any objection or defense based on federal preemption, sovereign immunity, or immunity from state regulation.

Cost: \$16,000,000

Timeline: Dependent upon funding

Action 2: Develop a TMDL implementation plan.

Regulatory Agencies/Contacts: GADNR-Georgia Environmental Protection Division (GAEPD), Wildlife Resources Division (WRD), and Coastal Resources Division (CRD), USFWS, NMFS, USACE, Federal Energy Regulatory Commission (FERC), US EPD, federal and state legislators, and local municipalities

Goal/Target: Reduce organic loads to sustain acceptable DO levels.

Progress: The Savannah River and Harbor have been extensively studied over the last ten years and a TMDL has been proposed for DO. The Savannah River and Harbor TMDL indicates a need for substantial reductions in organic loads for all dischargers from Augusta to the harbor (GAEPD 2011). Groups from South Carolina and Georgia representing the Central Savannah River Area (CSRA) as well as harbor dischargers have been tasked to develop a TMDL implementation plan.

Cost: Unknown

Timeline: Unknown

Salinity-Dredging/deepening the Savannah Harbor has altered salinity levels in the lower Savannah River and the current SHEP could exacerbate saltwater intrusion.

Action 1: Mitigate potential impacts of SHEP on salinity levels.

Regulatory Agencies/Contacts: The USFWS, NMFS, USACE, FERC, GADNR, SC DNR, Georgia Ports Authority, South Carolina Coastal Conservation League, Savannah

Riverkeeper, and South Carolina Wildlife Federation, Savannah River Maritime Commission (SRMC) and the South Carolina Department of Health & Environmental Control (DHEC).

Goal/Target: Develop and implement plans that would mitigate the effects of the SHEP on the salinity levels in the lower Savannah River.

Progress: USACE utilized models to determine appropriate measure to mitigate for salinity and tidal wetland impacts. Mitigation plans call for series of actions that include a diversion structure, closure of cuts, filling a sediment basin, and removal of tide gate abutments and piers (Tetra Tech 2010). While these plans do not fully mitigate for all impacts, they are expected to provide substantial benefits to the fresh water marsh ecosystems by providing additional fresh water flows to the Back River System and will limit saltwater intrusion to the Back River area.

Cost: Unknown

Timeline: Unknown

Detailed information concerning the SHEP project can be found at the following website:

<http://www.sas.usace.army.mil/Missions/CivilWorks/SavannahHarborExpansion.aspx>

e. Land use inventory and assessment-none

f. Atmospheric deposition assessment

Atmospheric deposition is measured as a cooperative effort between many different groups, including federal, state, tribal and local governmental agencies, educational institutions, private companies, and non-governmental agencies as part of the National Atmospheric Deposition Program (NADP). This organization uses many networks (NTN, AIRMoN, MDN, AMNet, and AMNoN) to monitor methyl mercury, ammonia, etc. Detailed information concerning atmospheric deposition in SC can be found at the following website: <http://nadp.sws.uiuc.edu/data/annualmaps.aspx>

It does not appear that current levels of atmospheric deposition are impacting American shad migrations or utilization of historic habitat.

g. Climate change assessment

A changing climate will present water-related challenges for American shad in several areas including: water quality, water quantity and changes in sea level. Current climate models predict

continued warming across the southeast, with the greatest temperature increases projected in summer. Average annual temperatures are projected to rise 4.5°F by the 2080s under a lower emissions scenario and 9°F under a higher emissions scenario with a 10.5°F increase in summer. The frequency, duration and intensity of droughts are likely to continue to increase with higher average temperatures and a higher rate of evapotranspiration. Drought conditions could potentially impact American shad recruitment and long duration drought could negatively impact multiple year classes. Sea level rise is of concern because of the expected change in location of the saltwater/freshwater interface. As sea level rises, saltwater will move further up the river systems of the state thus reducing the amount freshwater spawning habitat available. The amount and distribution of aquatic vegetation also will change in response to increases in salinity, limiting cover and food sources for aquatic organisms. A changing climate will impact the water resources of South Carolina and will present challenges for American shad management.

Action: Develop a climate change plan.

Regulatory Agencies/Contacts: SC Department of Natural Resources (SCDNR)

Goal/Target: Establish recommendations to address climate change.

Progress: A “draft” plan has been developed and is still under review. It can be accessed at the following weblink:

<http://www.dnr.sc.gov/pubs/CCINatResReport.pdf>

Cost: Unknown at this time.

Timeline: Unknown

h. Competition and predation by invasive and managed species assessment

Aquatic invasive species occur throughout South Carolina’s coastal rivers, and non-native ictalurids are some of the most ubiquitous invasive species. Flathead catfish (*Pylodictis olivaris*) and blue catfish (*Ictalurus furcatus*) were introduced into South Carolina in 1964 and are now found in all of South Carolina’s coastal rivers. A significant portion of blue catfish and especially flathead catfish diet is comprised of fish, and due to their large adult size (>60 lbs) they have the potential to consume both adult and juvenile American shad. Ictalurid population information is currently unavailable for South Carolina’s coastal rivers; however current studies are occurring in South Carolina and other neighboring states to assess the potential impacts of non-native catfish on American shad.

Action: Develop an invasive species plan.

Regulatory Agencies/Contacts: SCDNR and GADNR

Goal/Target: Establish recommendations to address invasive species.

Progress: SCDNR programs are currently monitoring catch rates of invasive catfish as part of non-targeting sampling and any flat head catfish captured during these activities are being removed from the system. In addition, current eradication programs, such as those that occurred on the Satilla River, GA, are being reviewed by SCDNR staff to determine if such programs are feasible for SC Rivers.

GA DNR completed experimental electro-fishing removals of flathead catfish from the Altamaha River system during the 1990s in an effort to restore native fish redbreast sunfish and bullhead spp populations that had been adversely impacted. These efforts were discontinued due to the large nature of the river, budget reductions, and shifts in angler attitudes. Current practices in the Satilla River have been reviewed to assess the feasibility of such programs for GA Rivers, including the Savannah and Ogeechee rivers. While GA DNR staff have thus far not initiated efforts to remove flatheads discovered in recent years in the Savannah due, in part, to the size and depth of the river, GA DNR staff have developed a response plan to address any potential introductions that may occur in the nearby Ogeechee River, a smaller coastal blackwater river just south of Savannah. Additionally, GA DNR has developed a Statewide Aquatic Nuisance Species Management Plan, which can be found at

https://georgiawildlife.com/sites/default/files/wrd/pdf/management/ANSPlan_Final_rev.pdf

Cost: Unknown at this time.

Timeline: Unknown

Final Thoughts (As Recommended and Supported by the TC)

The 2020 Atlantic States Marine Fisheries Commission's American Shad Stock Assessment and Peer Review Report provides an extensive review of available literature and discussion on the topic of fish passage (ASMFC 2020). Specifically, it highlights the issues with lack of evaluation and performance from decades-old approaches, facilities designs/operations that are not effective, and therefore cannot reasonably be expected to achieve management and restoration goals without significant changes. The Assessment Report also provides an important quantitative modeling approach examining shad habitat and passage barriers, and the need to address status quo fish passage performance. The impacts of these barriers and status quo passage are described and also modeled as effects on spawner population size under three scenarios, 1) no barriers, 2) first barrier with no passage, and 3) realistic fish passage performance measures applied to barriers (e.g., upstream passage efficiency of 50%).

The Assessment Report used standardized data and modelling approaches that quantified the impacts of barriers and fish passage as significant in all three management areas examined based on shad life history and habitat (New England, Mid-Atlantic, and South Atlantic). The assessment determined that overall, dams completely or partly block nearly 40% of the total habitat once used by American Shad. The model results of the "no barriers" scenario yielded an estimated spawner production potential 1.7 times greater than that yielded by the scenario assuming no passage at the first barrier: 72.8 million versus 42.8 million fish. The results of the third model scenario, which applies "realistic" (i.e., current) fish passage efficiencies, resulted in a gain of less than 3 million fish. Conclusions include "losses in (spawner production) potential are significant in each state and region." The Assessment Report provides a strong justification for the need and benefits of requiring improved fish passage performance measures. Additionally, meeting such improved passage performance standards is now an achievable goal given the current state of knowledge on fish behavior, swimming performance, and fish passage engineering expertise.

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Georgia Department of Natural Resources American Shad Habitat Plan



Submitted to the Atlantic States Marine Fisheries Commission as a requirement of Amendment 3 to the Interstate Management Plan for Shad and River Herring

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Altamaha River

Habitat Assessment

The Altamaha River is formed by the confluence of the Ocmulgee and Oconee rivers and flows approximately 220 km before emptying into the Atlantic Ocean near Darien, GA. Including its longest tributary (the Ocmulgee River), the Altamaha River runs for approximately 756 km, making it the seventh longest river in the U.S. that is entirely within one state. The Altamaha River drainage basin covers an area of approximately 36,000 km², with its headwaters arising near Atlanta, GA for the Ocmulgee River and near Athens, GA for the Oconee River. There are no dams directly on the Altamaha, though there are dams on both the Oconee and the Ocmulgee rivers. With no barriers directly on the Altamaha all historical estuarine habitat remains available to juvenile and migrating adult shad.

Historical evidence suggests that American shad once occurred in the Altamaha Basin at least as far upstream as the vicinity of Covington, GA in the Ocmulgee River Basin and near the city of Athens, GA in the Oconee River Basin [Bryson 1826; Baird 1884; Bill Frazier, U. S. Fish and Wildlife Service (retired), 2001, personal communication; Elizabeth Reitz, University of Georgia, 2007, personal communication]. However, the construction of dams has limited their migrations. Most of these structures are still in place and continue to serve as barriers to nearly 6,000 acres of potential riverine shad habitat.

American shad currently occur from the mouth of the Altamaha River to the East Juliette Hydroelectric Dam on the Ocmulgee River (approximately river km 570) and Sinclair Dam on the Oconee River (approximately river km 446). Approximately 70% of the historical riverine habitat currently remains available to migrating adult American shad.

Threats Assessment

- 1. Migration Barriers-** Full utilization of all potential spawning habitat in the Altamaha River Basin could entail modification of several dams in the Oconee, Ocmulgee, and Oohoopee Basins, to facilitate fish passage.

Action 1: Develop a plan for establishing fish passage at barriers in the Altamaha River system.

Regulatory Agencies/Contacts: USFWS, NMFS, FERC, USACE, Georgia Department of Natural Resources (GA DNR), dam owners/operators, and federal and state legislators.

Goal/Target: Establish fish passage at all dams in the Altamaha basin, where passage is determined to be feasible.

Progress: GA DNR has developed an American shad restoration plan for the Altamaha River Basin, which includes the implementation of fishways as a restoration strategy. The

plan calls for utilizing Section 18 of the Federal Power Act, which provides the U.S. Departments of Commerce and Interior mandatory conditioning authority to prescribe fish passage during the Federal Energy Regulation Commission (FERC) licensing process for hydroelectric facilities. The FERC-licensed hydroelectric facilities in the Altamaha Basin that are within the historic range of the American shad should have fish passage provisions included in their upcoming licenses, when passage is determined to be feasible.

For FERC-licensed facilities that already have a spawning population directly below them (e.g., East Juliette Hydroelectric Dam, Sinclair Dam), fish passage should be evaluated and implemented as soon as feasible (or upon FERC relicensing). For all other FERC-licensed facilities, fish passage should be provided in a stepwise fashion upon the establishment of spawning runs directly below these structures (upon fish passage at all downstream structures).

For non-FERC-licensed dams, resource agencies should work with owners to explore passage opportunities such as fishways, breaching, or removal. Where feasible, obsolete or non-functioning barriers to migration should be removed or breached.

Progress has been made in recent years regarding re-establishing fish passage and improving habitat. One such example is the removal of the White Dam on the Middle Oconee River near Athens, GA in 2018.

East Juliette Hydroelectric Dam

A fish passage prescription for East Juliette Hydroelectric dam has been completed. However, negotiations between the Services and project operator are still ongoing and construction of the fishway has not been initiated.

Cost: Unknown

Timeline: Unknown

Action 2: Potentially conduct experimental trap and transport operations.

Regulatory Agencies/Contacts: GA DNR, ASMFC, USFWS, NMFS, FERC, USACE, dam owners and operators, and federal and state legislators.

Goal/Target: Assess of upstream migratory behavior and level of passage at partial barriers and to provide access to additional spawning habitat that may be more suitable than that available below downstream barriers.

Progress: Experimental trap and transport operations are listed as a potential method for assessing migratory behavior, partial barrier passage, and allow for potential spawning at previously unavailable habitat. GA DNR has no immediate plans to initiate trap and transport activities at this time.

Cost: Unknown

Timeline: Unknown

- 2. Dissolved Oxygen-** Though no dissolved oxygen issues have been identified within the Altamaha River itself, segments of tributary rivers and streams have been identified as not having sufficient assimilative capacity to maintain dissolved oxygen levels of 5mg/L or greater at maximum permitted discharge levels under low flow conditions.

Action 1: Develop a regional water plan that recommends appropriate water management practices to ensure healthy aquatic ecosystems.

Regulatory Agencies/Contacts: GA DNR-Environmental Protection Division (EPD), Wildlife Resources Division (WRD), and Coastal Resources Division (CRD), state legislators, and local municipalities

Goal/Target: Ensure water quantity remains adequate to support all life stages of American shad and other aquatic organisms in the Altamaha River.

Progress: In 2008, the Georgia General Assembly, as part of the Statewide Comprehensive Water Management Plan, established 10 regional water planning councils that encompassed the 14 major river systems within Georgia. With technical guidance from GA EPD, these councils were tasked with developing regional water plans that outlined management practices to meet future water needs for both water quantity and water quality through 2050. In November 2011, the ten regional water plans were officially adopted by GA EPD.

The Altamaha Council recommended a suite of surface water quality management practices in a phased approach to address water quality issues, including stream segments with limited localized dissolved oxygen assimilative capacity and insufficient wastewater permit capacity (GA EPD 2011a). These recommendations include such practices as the additional sustainable development of groundwater and surface water in areas with sufficient water supply; best management practices for water quality issues such as non-point source runoff, nutrient loadings, and TMDLs in the region; and additional educational and ordinance practices.

For the Altamaha Region, 75 impaired stream reaches (total impaired length of 915 miles) and 2 impaired lakes (total impaired area of 390 acres) have been identified. The majority of impairments are due to low dissolved oxygen and fecal coliform. Total maximum daily loads have been completed for 71 of the impaired stream reaches and for both of the impaired lakes.

Cost: Unknown

Timeline: Regional water plan extends through 2050

- 3. Competition and Predation by Invasive Species-** Flathead catfish and blue catfish have been introduced into that Altamaha River system through unauthorized stockings. A significant portion of both flathead catfish and blue catfish diets are comprised of fish, and due to their large adult size (>60 lbs) they have the potential to consume both adult and juvenile American shad. Flathead catfish were first documented in the Ocmulgee River in the early-1970's and have now colonized the entire Altamaha River system. Abundance of flathead catfish rapidly expanded from approximately 1980 through the late-1990's. Electrofishing catch rates by weight peaked at 274 kg/hr in 1993 and by number at 108 fish/hr in 2004. Since 2000, electrofishing catch rates have ranged from 43-135 fish/hr, having a CPUE of 111.97 fish/hr in 2020. The average size of the flathead catfish in the Altamaha River peaked at approximately 3.5 kg in the mid-1990's and has since decreased to approximately 1 kg. A diet analysis of flathead catfish was completed during the months of June-September of 1997 and found the dominant prey items to be centrarchid spp. and ictalurid spp (Weller and Robbins, 2001). No *Alosa* spp. were identified in the stomach of flathead catfish during this study, but consumed juvenile American and/or hickory shad could have been unidentifiable due to extensive digestion.

Blue catfish were first detected in the Altamaha River in 2006 and their abundance has steadily increased. In 2011, blue catfish electrofishing CPUE was 29 fish/hr, and in 2020 blue catfish CPUE was 63 fish/hr. It is expected that the abundance of this species will continue to increase for several more years. Stomach contents of 257 blue catfish were analyzed in the summer of 2010 and it was found that *Alosa* spp. comprised 0.4% by number of prey items consumed (Bonvechio et al. 2012). The majority of the blue catfish in this study were relatively small (59.5% < 300 mm) so as larger blue catfish become more abundant utilization of *Alosa* spp as a prey item may increase.

Action 1: Management of invasive catfish species.

Regulatory Agencies/Contacts: GA DNR

Progress: GA DNR completed experimental electrofishing removals of flathead catfish from the Altamaha River system during the 1990s in an effort to restore native fish redbreast sunfish and bullhead *spp* populations that had been adversely impacted. These efforts were discontinued due to the large nature of the river, budget reductions, and shifts in angler attitudes.

Cost: Unknown

Timeline: Discontinued

Ogeechee River

Habitat Assessment

The Ogeechee River originates in the Georgia piedmont and flows for approximately 425 km while crossing the fall line, sandhill region, and the coast plain before emptying into the Atlantic Ocean in Ossabaw Sound. The Ogeechee River watershed encompasses approximately 14,300 km². Tidal influence typically extends to rkm 72 and the fresh/saltwater interface occurs approximately 56 km upstream from the mouth of the river. No manmade barriers are present the entire length of the Ogeechee River, so all historical riverine and estuarine habitats remain available to juvenile and migrating adult American shad.

Threats Assessment

- 1. Instream Flow-** The Georgia Environmental Protection Division (EPD) conducted resource assessments to predict resource conditions based on projection population growth and resulting water demands through 2050. Based on these predictions peak season agricultural irrigation may result in potential in-stream flow shortages in the Ogeechee Basin (GA EPD 2011b). The stream flow may fall below the in-stream flow target during summer low flow periods after meeting upstream irrigation needs.

Action 1: Develop a regional water plan that recommends appropriate water management practices to ensure healthy aquatic ecosystems.

Regulatory Agencies/Contacts: GA DNR-EPD/WRD/CRD, USFWS, NMFS, FERC, US EPD, USACE, federal and state legislators, and local municipalities.

Goal/Target: Ensure water quantity remains adequate to support all life stages of American shad and other aquatic organisms in the Ogeechee River.

Progress: In 2008, the Georgia General Assembly, as part of the Statewide Comprehensive Water Management Plan, established 10 regional water planning councils that encompassed the 14 major river systems within Georgia. With technical guidance from GA EPD, these councils were tasked with developing regional water plans that outlined management practices to meet future water needs for both water quantity and water quality through 2050. In November 2011, the ten regional water plans were officially adopted by GA EPD.

To prevent potential shortages in meeting in-stream flow needs, the plan encompassing the Ogeechee River calls for more aggressive water conservation practices and development of drought management practices for the agricultural users/permittees in the Upper Ogeechee River Basin (GA EPD 2011b). The Council also recommends in-stream flow studies (to determine what flow levels are appropriate for protecting aquatic life) and additional stream flow monitoring in the Ogeechee River Basin (to confirm the frequency and magnitude of predicted in-stream flow shortages).

Cost: Unknown

Timeline: Regional water plan extends through 2050

- 2. Point Source Discharges-** In May 2011, the Ogeechee River experienced a large-scale fish kill that affected multiple species including American shad. The upper extent of the kill was below the only industrial discharge above the kill area.

Action 1: Develop and implement permits and monitoring to avoid future fish kills.

Regulatory Agencies/Contacts: GA DNR-EPD/WRD, US EPA, and appropriate private industrial operators.

Goal/Target: Ensure water quality remains adequate to support all life stages of American shad and other aquatic organisms in the Ogeechee River.

Progress: After the 2011 fish kill, GA EPA reviewed and revised the existing discharge permit for King America Finishing in attempt to prevent future fish kills related to their discharge. GA EPA has since closely monitored water quality in this area of the Ogeechee River.

Cost: Unknown

Timeline: Currently ongoing

Satilla River

Habitat Assessment

The Satilla River originates in Ben Hill County near the town of Fitzgerald, GA and flows for approximately 378 km before emptying into the Atlantic Ocean in St. Andrews Sound. The Satilla River watershed encompasses approximately 10,000 km² of Georgia's coastal plain. Tidal influence typically extends to rkm 93 and the fresh/saltwater interface occurs approximately 32 km upstream from the mouth of the river. No manmade barriers are present the entire length of the Satilla River, so all historical riverine and estuarine habitats remain available to juvenile and migrating adult American shad.

Threats Assessment

- 1. Competition and Predation by Invasive Species-** Flathead catfish were introduced into that Satilla River system through unauthorized stockings in the mid-1990s and blue catfish were collected by GA DNR in 2012. A significant portion of flathead catfish diets

are comprised of fish, and due to their potential large adult size (>100 lbs) they have the potential to consume both adult and juvenile American shad.

Action 1: Management of invasive catfish species.

Regulatory Agencies/Contacts: GA DNR

Progress: GA DNR initiated electrofishing removals of flathead catfish from the Satilla River in 1996 with existing manpower and funding in an effort to preserve native fish species, specifically redbreast sunfish and bullhead spp. Flathead abundance continued to increase despite these efforts, which were limited due to manpower and fiscal limitations. Native fish populations were also showing early signs of decline. In 2006, Georgia's legislature appropriated funding for dedicated positions and equipment to conduct extensive flathead catfish removal efforts on the Satilla River. Since 2007, approximately 82,000 flathead catfish weighing over 163,000 lbs have been removed from the Satilla River. Over time, these efforts have resulted in a significant reduction in the flathead catfish biomass and appear to be preserving the abundance of native species.

Blue catfish were first observed in the river in 2010, with only a few individuals being collected in the first few years. In 2016, abundance dramatically rose when 224 blue catfish were captured during electrofishing efforts. Subsequent years (2017=397; 2018=58; 2019=663; 2020=187) continued to produce several fish. GA DNR suspects that these fish may have colonized the Satilla River from the Altamaha River via the intercostal water way during a high flow period, due to their relatively high tolerance to brackish water.

Cost: Unknown

Timeline: Ongoing

- 2. Dissolved Oxygen-** Dissolved oxygen levels below 3 mg/L occur during low flow events in the months of July-September in an approximately a 30 km segment of the tidally influenced portion of the Satilla River. The Satilla River naturally has a low assimilative capacity and resulting low DO levels during summer low flow periods, therefore it may not be possible to maintain DO levels above 3 mg/L at all times. However, the actions listed below will still be beneficial.

Action 1: Develop a TMDL implementation plan.

Regulatory Agencies/Contacts: GA DNR-EPD/WRD/CRD, state legislators, and local municipalities

Goal/Target: Reduce organic loads to sustain acceptable DO levels.

Progress: GA DNR worked with representatives of local municipalities and conservation groups and developed a TMDL implementation plan that included a suite of

management measure to reduce organic carbon, Total Nitrogen, and Total Phosphorous inputs in order to improve dissolved oxygen levels in the Satilla River.

Cost: Unknown

Timeline: Unknown

Action 2: Develop a regional water plan that recommends appropriate water management practices to ensure healthy aquatic ecosystems.

Regulatory Agencies/Contacts: GA DNR-EPD/WRD/CRD, USFWS, NMFS, FERC, US EPD, USACE, federal and state legislators, and local municipalities.

Goal/Target: Ensure water quantity remains adequate to support all life stages of American shad and other aquatic organisms in the Satilla River.

Progress: In 2008, the Georgia General Assembly, as part of the Statewide Comprehensive Water Management Plan, established 10 regional water planning councils that encompassed the 14 major river systems within Georgia. With technical guidance from GA EPD, these councils were tasked with developing regional water plans that outlined management practices to meet future water needs for both water quantity and water quality through 2050. In November 2011, the ten regional water plans were officially adopted by GA EPD.

The Suwannee-Satilla-St Mary's Council recommended a suite of surface water quality management practices in a phased approach to address water quality gaps, including stream segments with limited localized dissolved oxygen assimilative capacity and insufficient wastewater permit capacity (GA EPD 2011c). Specific actions to add/improve infrastructure and improve flow and water quality conditions were identified and recommended. These include such practices as the additional sustainable development of groundwater and surface water in areas with sufficient water supply; best management practices for water quality issues such as non-point source runoff, nutrient loadings, and TMDLs in the region; and additional educational and ordinance practices.

Cost: Unknown

Timeline: Regional water plan extends through 2050

- 3. Instream Flow-** The Georgia EPD conducted resource assessments on current and predicted resource conditions based on projected population growth and resulting water demands through 2050. These assessments concluded that instream flow shortages were present under current and future demands in portions of the Satilla Basin.

Action 1: Develop a regional water plan that recommends appropriate water management practices to ensure healthy aquatic ecosystems.

Regulatory Agencies/Contacts: GA DNR-EPD/WRD/CRD, USFWS, NMFS, FERC, US EPD, USACE, federal and state legislators, and local municipalities.

Goal/Target: Ensure water quantity remains adequate to support all life stages of American shad and other aquatic organisms in the Satilla River.

Progress: The Satilla River water management plan was officially adopted by GA EPD in November 2011 and recommended a suite of management practices, including those that reduce net consumption, replace surface water use with groundwater use, and improve data on frequency and magnitude of gaps (GA EPD 2011c).

Cost: Unknown

Timeline: Regional water plan extends through 2050

St. Mary's River

Habitat Assessment

The St. Mary's River originates in the Okefenokee Swamp and flows for approximately 203 km before emptying into the Atlantic Ocean in Cumberland Sound while forming the eastern portion of the border between Florida and Georgia. The St. Mary's watershed encompasses approximately 3,350 km² of which 59% is in Georgia and 41% in Florida. Tidal influence typically extends to rkm 88 and the fresh/saltwater interface occurs approximately 33 km upstream from the mouth of the river. No manmade barriers are present the entire length of the St. Mary's River, so all historical riverine and estuarine habitats remain available to juvenile and migrating adult American shad.

Threats Assessment

- 1. Dissolved Oxygen-** Dissolved oxygen levels below 3 mg/L occur during low flow events in the months of July-September months of July-September in an approximately a 40 km segment of the tidally influenced portion of the St. Mary's River. The St Mary's River naturally has a low assimilative capacity and resulting low DO levels during summer low flow periods, therefore it may not be possible to maintain DO levels above 3 mg/L at all times. However, the actions listed below will still be beneficial.

Action 1: Develop a TMDL implementation plan.

Regulatory Agencies/Contacts: Georgia Department of Natural Resources (GA DNR)-Environmental Protection Division (EPD), Wildlife Resources Division (WRD), and Coastal Resources Division (CRD), FL FWC, FL DEP, St. Johns Water Management District, state legislators, and local municipalities

Goal/Target: Reduce organic loads to sustain acceptable DO levels.

Progress: GA DNR worked with representatives of local municipalities and conservation groups and developed a TMDL implementation plan that included a suite of management measure to reduce organic inputs in order to improve dissolved oxygen levels in the St. Mary's River.

Cost: Unknown

Timeline: Unknown

Action 2: Develop a regional water plan that recommends appropriate water management practices to ensure healthy aquatic ecosystems.

Regulatory Agencies/Contacts: GA DNR-EPD/WRD/CRD, USFWS, NMFS, FERC, US EPD, USACE, federal and state legislators, and local municipalities.

Goal/Target: Ensure water quantity remains adequate to support all life stages of American shad and other aquatic organisms in the St. Mary's River.

Progress: In 2008, the Georgia General Assembly, as part of the Statewide Comprehensive Water Management Plan, established 10 regional water planning councils that encompassed the 14 major river systems within Georgia. With technical guidance from GA EPD, these councils were tasked with developing regional water plans that outlined management practices to meet future water needs for both water quantity and water quality through 2050. All 10 regional water plans were officially adopted in 2011.

The Suwannee-Satilla-St Mary's Council recommended a suite of surface water quality management practices in a phased approach to address water quality gaps, including stream segments with limited localized dissolved oxygen assimilative capacity and insufficient wastewater permit capacity (GA EPD 2011c). Specific actions to add/improve infrastructure and improve flow and water quality conditions were identified and recommended. These include such practices as the additional sustainable development of groundwater and surface water in areas with sufficient water supply; best management practices for water quality issues such as non-point source runoff, nutrient loadings, and TMDLs in the region; and additional educational and ordinance practices.

Cost: Unknown

Timeline: Regional water plan extends through 2050

Final Thoughts (As Recommended and Supported by the TC)

The 2020 Atlantic States Marine Fisheries Commission's American Shad Stock Assessment and Peer Review Report provides an extensive review of available literature and discussion on the topic of fish passage (ASMFC 2020). Specifically, it highlights the issues with lack of evaluation and performance from decades-old approaches, facilities designs/operations that are not effective, and therefore cannot reasonably be expected to achieve management and restoration goals without significant changes. The Assessment Report also provides an important quantitative modeling approach examining shad habitat and passage barriers, and the need to address status quo fish passage performance. The impacts of these barriers and status quo passage are described and also modeled as effects on spawner population size under three scenarios, 1) no barriers, 2) first barrier with no passage, and 3) realistic fish passage performance measures applied to barriers (e.g., upstream passage efficiency of 50%).

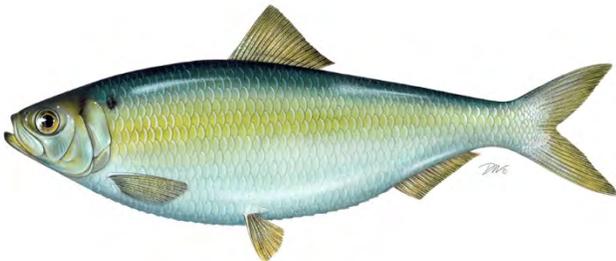
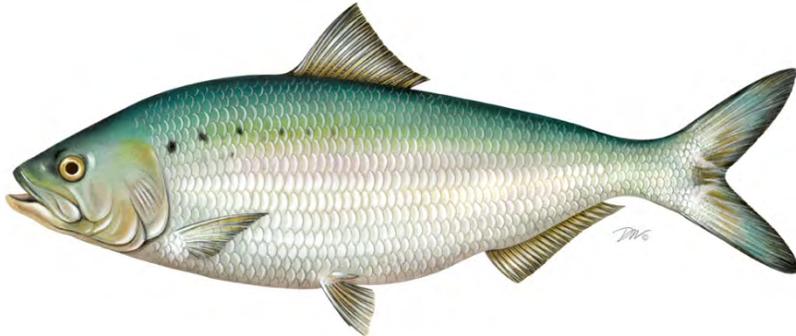
The Assessment Report used standardized data and modelling approaches that quantified the impacts of barriers and fish passage as significant in all three management areas examined based on shad life history and habitat (New England, Mid-Atlantic, and South Atlantic). The assessment determined that overall, dams completely or partly block nearly 40% of the total habitat once used by American Shad. The model results of the "no barriers" scenario yielded an estimated spawner production potential 1.7 times greater than that yielded by the scenario assuming no passage at the first barrier: 72.8 million versus 42.8 million fish. The results of the third model scenario, which applies "realistic" (i.e., current) fish passage efficiencies, resulted in a gain of less than 3 million fish. Conclusions include "losses in (spawner production) potential are significant in each state and region." The Assessment Report provides a strong justification for the need and benefits of requiring improved fish passage performance measures. Additionally, meeting such improved passage performance standards is now an achievable goal given the current state of knowledge on fish behavior, swimming performance, and fish passage engineering expertise.

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**REVIEW OF THE ATLANTIC STATES MARINE FISHERIES COMMISSION
FISHERY MANAGEMENT PLAN FOR SHAD AND RIVER HERRING
(*Alosa spp.*) FOR THE 2019 FISHING YEAR**



Shad & River Herring Plan Review Team

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January 2021

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REVIEW OF THE ASMFC FISHERY MANAGEMENT PLAN FOR
SHAD AND RIVER HERRING (*Alosa spp.*)

I. Status of the Fishery Management Plan

<u>Date of FMP Approval:</u>	October 1985
<u>Amendments:</u>	Amendment 1 (April 1999) Amendment 2 (August 2009) Amendment 3 (February 2010)
<u>Addenda:</u>	Technical Addendum #1 (February 2000) Addendum I (August 2002)
<u>Management Unit:</u>	Migratory stocks of American shad, hickory shad, alewife, and blueback herring from Maine through Florida
<u>States With Declared Interest:</u>	Maine through Florida, including the Potomac River Fisheries Commission (PRFC) and the District of Columbia
<u>Active Boards/Committees:</u>	Shad & River Herring Management Board, Advisory Panel, Technical Committee, Stock Assessment Subcommittee, Plan Review Team, Plan Development Team

The 1985 Fishery Management Plan (FMP) for Shad and River Herring was one of the first FMPs developed by the ASMFC. Amendment 1 was initiated in 1994 to require and recommend specific monitoring programs to inform future stock assessments—it was implemented in October 1998. A Technical Addendum to Amendment 1 was approved in 1999 to correct technical errors.

The Shad and River Herring Management Board (Board) initiated Addendum I in February 2002 to change the conditions for marking hatchery-reared alosines; clarify the definition and intent of *de minimis* status for the American shad fishery; and modify and clarify the fishery-independent and dependent monitoring requirements. These measures went into effect on January 1, 2003.

In May 2009, the Board approved Amendment 2 to restrict the harvest of river herring (blueback herring and alewife) due to observed declines in abundance. The Amendment prohibited commercial and recreational river herring harvest in state waters beginning January 1, 2012, unless a state or jurisdiction has a sustainable fishery management plan (SFMP) reviewed by the Technical Committee and approved by the Board. The Amendment defines a sustainable fishery as “a commercial and/or recreational fishery that will not diminish the potential future stock reproduction and recruitment.” Catch and release only fisheries may be maintained in any river system without an SFMP. SFMPs have been approved by the Management Board for Maine, New Hampshire, Massachusetts, New York, and South Carolina (Table 1). Amendment 2 also required states to implement fishery-dependent and independent

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monitoring programs.

In February 2010, the Board approved Amendment 3 in response to the 2007 American shad stock assessment, which found most American shad stocks at all-time lows. The Amendment requires similar management and monitoring for shad as developed in Amendment 2 (for river herring). Specifically, Amendment 3 prohibits shad commercial and recreational harvest in state waters beginning January 1, 2013, unless a state or jurisdiction has a SFMP reviewed by the Technical Committee and approved by the Board. The Amendment defines a sustainable fishery as “a commercial and/or recreational fishery that will not diminish the potential future stock reproduction and recruitment.” Catch and release only fisheries may be maintained in any river system without an SFMP. SFMPs have been approved by the Board for Massachusetts, Connecticut, the Delaware River Basin Fish Cooperative (on behalf of New York, Delaware, New Jersey, and Pennsylvania), PRFC, North Carolina, South Carolina, Georgia, and Florida (Table 1). All states and jurisdictions are also required to identify local significant threats to American shad critical habitat and develop a plan for mitigation and restoration. All states and jurisdictions habitat plans have been accepted and approved.

Table 1. States/jurisdictions with approved sustainable fishery management plans (SFMPs) for river herring or shad. Includes year of original Board approval and approved updates¹.

State	River Herring SFMP	Shad SFMP
Maine	Approved (2010, 2017, 2020)	Approved (2020)
New Hampshire	Approved (2011, 2015, 2020)	
Massachusetts	Approved (2016)	Approved (2012, 2019)
Connecticut		Approved (2012, 2017)
Rhode Island		
Pennsylvania		Approved* (2012, 2017, 2020)
New York	Approved (2011, 2017)	Approved* (2012, 2017, 2020)
New Jersey		Approved* (2012, 2017, 2020)
Delaware		Approved* (2012, 2017, 2020)
PRFC		Approved (2012, 2017)
Maryland		
Virginia		
North Carolina		Approved (2012, 2017, 2020)
South Carolina	Approved (2010, 2017, 2020)	Approved (2011, 2017, 2020)
Georgia		Approved (2012, 2017, 2020)
Florida		Approved (2011, 2017, 2020)

*The Delaware River Basin Fish and Wildlife Management Co-op has a Shad SFMP, though Delaware and New Jersey are only states that have commercial fisheries. All states have recreational measures, with limited to no catch in the upper Delaware River (New York & Pennsylvania).

¹ SFMPs must be updated and re-approved by the Board every five years.

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II. Status of the Stocks

While the FMP addresses four species: two river herrings (blueback herring and alewife) and two shads (American shad and hickory shad)—these are collectively referred to as shad and river herring, or SRH.

The most recent American Shad Benchmark Stock Assessment (ASMFC 2020) indicates American shad remain depleted on a coastwide basis. Multiple factors, such as overfishing, inadequate fish passage at dams, predation, pollution, water withdrawals, channelization of rivers, changing ocean conditions, and climate change are likely responsible for shad decline from historic abundance levels. Additionally, the assessment finds that shad recovery is limited by restricted access to spawning habitat. Current barriers partly or completely block 40% of historic shad spawning habitat, which may equate to a loss of more than a third of spawning adults.

Of the 23 river-specific stocks of American shad for which sufficient information was available, adult mortality was determined to be unsustainable for three stocks (Connecticut, Delaware, and Potomac) and sustainable for five stocks (Hudson, Rappahannock, York, Albemarle Sound, and Neuse). The terms “sustainable” and “unsustainable” were used instead of “not overfishing” and “overfishing” because fishing mortality cannot be separated from other components contributing to total mortality. The assessment was only able to determine abundance status for two stocks: abundance for the Hudson is depleted, and abundance for the Albemarle Sound is not overfished. For the Hudson and coastwide metapopulation, the “depleted” determination was used instead of “overfished” because the impact of fishing on American shad stocks cannot be separated from the impacts of all other factors responsible for changes in abundance.

The status of 15 additional stocks could not be determined due to data limitations, so trends in YOY and adult abundance were provided for information on abundance changes since the 2005 closure of the ocean-intercept fishery. For YOY indices, two systems experienced increasing trends while one system experienced a decreasing trend since 2005. All other systems experienced either no trend (eight systems), conflicting trends among indices (one system), or had no data (11 systems). For adult indices, four systems experienced increasing trends while no systems experienced decreasing trends since 2005. All other systems experienced either no trend (11 systems), conflicting trends among indices (seven systems), or had no data (one system). Trend analyses also indicate a continued lack of consistent increasing trends in coastwide metapopulation abundance since 2005.

Taken in total, American shad stocks do not appear to be recovering. The assessment concluded that current restoration actions need to be reviewed and new efforts need to be identified and applied. Because multiple factors are likely responsible for shad decline, the recovery of American shad will need to address multiple factors including improved monitoring, anthropogenic habitat alterations, predation by non-native predators, and exploitation by fisheries. There are no coastwide reference points for American shad. There is no stock assessment available for hickory shad.

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The most recent *River Herring Benchmark Assessment Report* (ASMFC 2012) indicated that of the 24 river herring stocks for which sufficient data were available to make a conclusion, 23 were depleted relative to historic levels and one was increasing. The status of 28 additional stocks could not be determined because the time-series of available data was too short.

Estimates of coastwide abundance and fishing mortality could not be developed because of the lack of adequate data. The “depleted” determination was used instead of “overfished” because of the many factors that have contributed to the declining abundance of river herring, which include not just directed and incidental fishing, but likely also habitat issues (including dam passage, water quality, and water quantity), predation, and climate change. There are no coastwide reference points.

The river herring stock assessment was updated in 2017 (ASMFC 2017) with additional data from 2011-2015, and concluded that river herring remain depleted at near historic lows on a coastwide basis. Total mortality estimates over the final three years of the data time series (2013-2015) were generally high and exceed region-specific reference points for some rivers. However, some river systems showed positive signs of improvement. Total mortality estimates for 2 rivers fell below region-specific reference points during the final three years of the data time series. No total mortality estimates were below reference points at the end of the 2012 stock assessment data time series. Of the 54 stocks with available data, 16 experienced increasing abundance trends, 2 experienced decreasing abundance trends, 8 experienced stable abundance and 10 experienced no discernable trend in abundance over the final 10 years of the time series (2006-2015).

III. Status of the Fisheries

Shad and river herring formerly supported the largest and most important commercial and recreational fisheries throughout their range. Historically fishing took place in rivers (both freshwater and saltwater), estuaries, tributaries, and the ocean. Although recreational harvest data are scarce, today most harvest is believed to come from the commercial industry. Commercial landings for these species have declined dramatically from historic highs. Details on each fishery are provided below.

AMERICAN SHAD:

Total commercial landings throughout the 1950s fluctuated around 8 million pounds, then declined to just over two million pounds in 1976. A period of moderate increase occurred through the mid-1980s, followed by further declines through the remainder of the time series. Since the closure of the ocean intercept fishery in 2005, landings have been substantially lower, falling below one million pounds. Since 2015, landings have remained below half a million pounds.

The total commercial landings (directed and bycatch) reported in compliance reports from individual states and jurisdictions in 2019 were 273,450 pounds, representing a 4% decrease from landings in 2018 (285,523 pounds) (Table 2). Bycatch landings accounted for approximately 48% of the total commercial landings of American shad in 2019. Landings from South Carolina, North Carolina, and Georgia accounted for 31%, 29%, and 21% of the directed coastwide commercial fishery removals in 2019, respectively. The remainder of the directed

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landings came from New Jersey, Connecticut, and Delaware. Maryland commercial fishermen are permitted a bycatch allowance of two fish per day of dead American shad for personal use, provided that shad are captured by gear legally deployed for the capture of other fish species; no sale is permitted. Landings from Virginia, District of Columbia, and PRFC are attributed to limited bycatch allowances for American Shad.

Substantial recreational shad fisheries occur on the Connecticut (CT and MA), Delaware (NY, PA NJ, and DE), Susquehanna (MD), Santee and Cooper (SC), and St. Johns (FL) Rivers. Shad recreational fisheries are also pursued on several other rivers in Massachusetts, District of Columbia, Virginia, North Carolina, South Carolina, and Georgia. Though shad are recreationally targeted in these locations, many fisheries are catch and release only. Hook and line shad catch levels are not well understood; actual harvest and/or effort is only estimated by a few states through annual creel surveys (e.g. Maryland, North Carolina, Georgia, and Florida). Harvest may only amount to a small portion of total catch (landings and discards), but hooking mortality could increase total recreational fishery removals substantially.

Since 2009, recreational harvest data from the Marine Recreational Information Program (MRIP) are generally not provided for American shad due to high proportional standard errors (PSEs). This is a result of the MRIP survey design, which focuses on active fishing sites along coastal and estuarine areas and is unsuitable for capturing inland harvest. However, North Carolina and Florida reported American shad recreational harvest estimates for 2019 (Table 3).

HICKORY SHAD:

In 2019, North Carolina, South Carolina, and Georgia reported directed commercial hickory shad landings; Rhode Island, New York, New Jersey, Virginia, and North Carolina reported bycatch landings. North Carolina accounts for a vast majority of directed landings, contributing 90% of the total. Coastwide commercial and bycatch landings in 2019 totaled 143,851 pounds, representing a 48% increase from 2018 landings (97,284 pounds) (Table 2). Only North Carolina reported recreational harvest: 8,517 fish in 2019.

RIVER HERRING (BLUEBACK HERRING/ALEWIFE COMBINED):

Commercial landings of river herring declined 95% from over 13 million pounds in 1985 to about 733 thousand pounds in 2005. Recent commercial landings continue to increase, despite the closure of the ocean-intercept fishery in 2005 and North Carolina implementing a no-harvest provision for commercial and recreational fisheries of river herring in coastal waters of the state in 2007. In 2019, the coastwide directed commercial river herring landings reported in state compliance reports were 2.5 million pounds, an 11% increase from 2018 (2.3 million pounds). Landings including bycatch in 2019 totaled 3.2 million pounds, a 32% increase from the 2018 total of 2.45 million pounds (Table 2). Confidential data preclude reporting commercial landings by state. Maine, New Hampshire, and Massachusetts provided estimates of recreational river herring harvest in 2019 (Table 3).

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Table 2. Shad and river herring total commercial fishery removals (directed landings and bycatch¹, in pounds) provided by states, jurisdictions and NOAA Fisheries for 2019.

	American Shad	Hickory Shad	River Herring
Maine	C	C	
New Hampshire	0	0	
Massachusetts	104,058	0	
Rhode Island	0	12,944	
Connecticut	5,596	C	
New York	1,581	C	
New Jersey	18,303	C	
Pennsylvania	0	0	
Delaware	2,404	0	
Maryland	0	0	
D.C.	0	0	
PRFC	17,454	0	
Virginia	3,821	414	
North Carolina	46,151	117,655	
South Carolina	43,290	C	
Georgia	30,356	12,104	
Florida	0	0	
Total Directed	140,920	124,091	2,502,011
Total Bycatch	132,530	19,760	720,111
Total	273,450	143,851	3,222,122

*All values for river herring by state are not shown due to confidential data. Confidential values by state for American shad and hickory shad are indicated by "C."

Table 3. Recreational harvest information for river herring and American shad in 2019 from MRIP and state compliance reports.

State	River Herring Harvest	American Shad Harvest	Source of Estimates
Maine	733.4 lbs		MRIP*
New Hampshire	17719.5 lbs		APAIS and mandatory-reporting for net and pot fishing
Massachusetts	2,090 fish		MRIP*
North Carolina		3,039 fish	Recreational creel surveys on the Roanoke, Tar, Neuse, and Cape Fear rivers
Florida		622 lbs	Access point creel survey on St. Johns River

*MRIP estimate considered highly uncertain, with a PSE of 90.8. Spatial coverage of MRIP sampling may not align with recreational harvest areas for shad. In Maine, only 3 shad were sampled in 2018 and fewer than 56 shad have been sampled since 1996.

IV. Status of Research and Monitoring

Amendment 2 (2009) and Amendment 3 (2010), required fishery-independent and fishery-dependent monitoring programs for select rivers. Juvenile abundance index (JAI) surveys, annual spawning stock surveys (Table 4), and hatchery evaluations are required for specified

¹ Available information on shad and river herring bycatch varies widely by state. Estimates may not capture all bycatch removals occurring in state waters.

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states and jurisdictions. States are required to calculate mortality and/or survival estimates, and monitor and report data relative to landings, catch, effort, and bycatch. States must submit annual reports including all monitoring and management program requirements on or before July 1 of each year.

In addition to the mandatory monitoring requirements stipulated under Amendments 2 and 3, some states and jurisdictions continue important voluntary research initiatives for these species. For example, Massachusetts, Pennsylvania, Delaware, Maryland, District of Columbia, North Carolina, South Carolina, and the United States Fish and Wildlife Service (USFWS) are actively involved in shad restoration using hatchery-cultured fry and fingerlings. All hatchery fish are marked with oxytetracycline marks on otoliths to allow future distinction from wild fish. During 2019, several jurisdictions reared American shad, stocking a total of 11,964,361 American shad, a decrease of 47% from the 22,754,925 shad stocked in 2018 (Table 5). In addition 1,195,808 river herring (both alewife and blueback) larvae were stocked in Harrison Lake, part of the James River system, in 2019.

V. Status of Management Measures

All state programs must implement commercial and recreational management measures or an alternative program approved by the Management Board (Table 1). The current status of each state's compliance with these measures is provided in the Shad and River Herring Plan Review Team Report (Table 6).

Amendment 2 (2009) prohibits river herring commercial and recreational harvest in state waters beginning January 1, 2012, unless a state or jurisdiction submits a sustainable fishery management plan and receives approval from the Board. Amendment 3 (2010) also requires the development of a SFMP for any jurisdiction maintaining a shad commercial or recreational fishery after January 1, 2013 (with the exception of catch and release recreational fisheries). States are required to update SFMPs every five years. In 2017, states reviewed their SFMPs and made changes based on fishery performance or observations (e.g., revised sustainability targets) where necessary. At a minimum, states updated data for their commercial and/or recreational fisheries and recommended the current sustainability measures be carried forward in the next plan. To date the Board has reviewed and approved updated SFMPs for all states, with the updated Massachusetts SFMP for shad being approved in February 2019.

Under Amendments 2 and 3 to the FMP, states may implement, with Board approval, alternative management programs for river herring and shad that differ from those required by the FMP. States and jurisdictions must demonstrate that the proposed management program will not contribute to overfishing of the resource or inhibit restoration of the resource. The Management Board can approve a proposed alternative management program if the state or jurisdiction can show to the Management Board's satisfaction that the alternative proposal will have the same conservation value as the measures contained in the FMP. In August 2020, the Board approved alternative management plans for recreational fishery regulations in South Carolina, Georgia, and Florida.

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Table 4. American shad and river herring passage counts at select rivers along the Atlantic coast in 2019.

State/River	Shad	River Herring
Maine		
Androscoggin	63	81,025
Saco	1,139	55,028
Kennebec	44	240,594
Sebasticook	114	3,287,702*
Penobscot	2,489	1,986,910
St. Croix		486,500
New Hampshire		
Cocheco	0	1,682
Exeter	0	28
Oyster	0	4,969
Lamprey	0	34,684
Winnicut	0	0
Massachusetts		
Merrimack	18,653	143,541
Rhode Island		
Gilbert Stuart	0	35,832
Nonquit	0	101,714
Buckeye Brook	0	38,418
Connecticut River		
Holyoke Dam	314,361	5,052
Pennsylvania		
Schuylkill (Fairmont Dam)	415	
Pennsylvania/Maryland/Delaware		
Susquehanna (Conowingo)**	4,787	15
Susquehanna (Holtwood)**	570	
Susquehanna (Safe Harbor)**	316	
South Carolina		
St. Stephen Dam	95,788	39,938
Total 2019	437,853	6,543,632
Total 2018	642,688	9,404,020
Total 2017	761,386	5,876,375
Total 2016	540,917	5,514,890
Total 2015	611,368	3,825,435

*Passage after harvest removals.

**Passage numbers on Susquehanna River are cumulative and listed in ascending order of passage mile with Conowingo being nearest the river's mouth.

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Table 5. Stocking of Hatchery-Cultured Alosine Larvae (Fry) in State Waters, 2019.

State	American Shad	River Herring
New Hampshire		
Lamprey River	2,829,219	
Massachusetts		
Merrimack River	271,155	
Nashua River	323,442	
Rhode Island		
Pawcatuck River	0	
Pawtuxet River	0	
Pennsylvania		
Susquehanna River	832,000	
Lehigh River	0	
Schuylkill River	0	
Delaware		
Nanticoke River	858,000	
Maryland		
Choptank River	2,805,000	
District of Columbia/PRFC		
Potomac River**	9,500	
Virginia		
James River	0	1,195,808
North Carolina		
Neuse River	0	
Roanoke River	0	
South Carolina		
Edisto River	28,799	
Wateree River	4,007,246	
Georgia		
Altamaha River	0	
Oconee River	0	
Total	11,964,361	1,195,808

*In Maine and Massachusetts river herring of wild origin are stocked as adult pre-spawning individuals through trap and transfer programs. These are not counted toward the total because they are not of hatchery origin.

**Numbers of fry stocked from combined efforts of PRFC, DC, and MD.

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VI. Prioritized Research Needs

Due to the large number of research recommendations identified during stock assessments of these alosine species, only research recommendations identified as high priority are presented below. Recommendations are categorized by the expected time frame necessary to complete the recommendation (short term vs. long term). See the most recent benchmark stock assessment of each species (2020 for American shad, 2012 for blueback herring and alewife) for additional important research recommendations.

AMERICAN SHAD

Short Term

- Otoliths should be collected as the preferred age structure. If collection of otoliths presents perceived impact to conservation of the stock, an annual subsample of paired otolith and scales (at least 100 samples if possible) should be collected to quantify error between structures.
- Error between structures, if scales are the primary age structure collected, and for spawn mark count estimates (either between multiple readers or within reader) should be quantified on an annual basis. A mean coefficient of variation (CV) of 5% and detection of no systematic bias should serve as targets for comparisons.
- Two readers should determine consensus ages and spawn mark counts based on improvements in ageing error in the Delaware system when consensus-based estimates were part of the ageing protocol.

Long Term

- Develop a centralized repository for agencies to submit and store genetic sampling data for future analysis. The Atlantic sturgeon repository at the United States Geological Survey (USGS) Leetown Science Center should serve as an example.
- Collect genetic samples from young-of-year (YOY) and returning mature adults during spawning runs for future analysis of baseline genetic population structure and site fidelity/straying rates. These data will help define stock structure, identify stock composition from genetic sampling of American shad catch in mixed-stock fisheries, and provide information on recolonization capabilities in defunct American shad systems.
- Conduct annual stock composition sampling through existing and new observer programs from all mixed-stock fisheries (bycatch and directed). Potential methods include tagging (conventional external tags or acoustic tags) of discarded catch and genetic sampling of retained and discarded catch. Mortality rates of juvenile fish in all systems remain unknown and improvement in advice from future stock assessments is not possible without this monitoring. Known fisheries include the Delaware Bay mixed-stock fishery and all fisheries operating in the Atlantic Ocean (U.S. and Canada) that encounter American shad (see Section 4.1.4 in the stock assessment report).
- Implement fishery-independent YOY and spawning run surveys in all systems with open fisheries. Surveys should collect catch rates, length, individual weight, sex (spawning runs), and age (spawning runs) data at a minimum to allow for assessment of stocks with legal harvest. Require these surveys be in operation in systems with requested fisheries before opening fisheries.

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- Conduct complete in-river catch monitoring in all systems with open fisheries. Monitoring programs should collect total catch, effort, size, individual weight, and age data at a minimum. Require these surveys be in operation in systems with requested fisheries before opening fisheries.
- Conduct maturity studies designed to accommodate the unique challenges American shad reproductive behavior (i.e., segregating by maturity status during spawning runs) poses on traditional monitoring programs. This information will also improve understanding of selectivity by in-river fisheries and monitoring programs.
- Conduct fish passage research at barriers with adults for both upstream and downstream migration and movements and with juveniles for downstream as discussed in Section 1.1.9.5 of the stock assessment report.

RIVER HERRING

Short Term

- Analyze the consequences of interactions between the offshore bycatch fishery and population trends in the rivers.
- Continue genetic analyses to determine population stock structure along the coast and enable determination of river origin of incidental catch in non-targeted ocean fisheries.
- Continue to assess current ageing techniques for river herring, using known-age fish, scales, otoliths, and spawning marks.
- Improve reporting of harvest by waterbody and gear.
- Develop and implement monitoring protocols and analyses to determine river herring population responses and targets for rivers undergoing restoration (dam removals, fishways, supplemental stocking, etc.).
- Explore the sources of and provide better estimates of incidental catch in order to reduce uncertainty in incidental catch estimates.

Long Term

- Encourage studies to quantify and improve fish passage efficiency and support the implementation of standard practices.
- Determine and quantify which stocks are impacted by mixed stock fisheries (including bycatch fisheries). Methods to be considered could include otolith microchemistry, oxytetracycline otolith marking, genetic analysis, and/or tagging.
- Validate [better estimate] the different values of natural mortality (M) for river herring stocks and improve methods for calculating M .
- Conduct biannual ageing workshops to maintain consistency and accuracy in ageing fish sampled in state programs.
- Investigate the relation between juvenile river herring production and subsequent year class strength, with emphasis on the validity of juvenile abundance indices, rates and sources of immature mortality, migratory behavior of juveniles, and life history requirements.
- Expand observer and port sampling coverage to quantify additional sources of mortality for alosine species, including bait fisheries, as well as rates of incidental catch in other fisheries.

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VII. Status of Implementation of FMP Requirements

In accordance with the Shad and River Herring Fishery Management Plan, the states are required to submit an annual compliance report by July 1st of each year. The Plan Review Team (PRT) reviewed all state reports for compliance with the mandatory measures in Amendments 2 (River Herring) and 3 (American shad). Table 6 provides important information on each state's fisheries, monitoring programs, and compliance issues pertaining to the 2019 fishing year. Table 7 summarizes state reports of protected species interactions.

De Minimis Status

A state can request *de minimis* status if commercial landings of river herring or shad are less than 1% of the coastwide commercial total. *De minimis* status exempts the state from the sub-sampling requirements for commercial and recreational catch for biological data. The following states have met the requirements and requested continued *de minimis* status in 2019:

- Maine (American shad)
- New Hampshire (American shad and river herring)
- Massachusetts (American shad)
- Florida (American shad and river herring)

State Compliance

All states with a declared interest in shad and river herring management have submitted annual compliance reports. Virginia has also submitted a separate bycatch report in accordance with the provisions of their limited bycatch program.

Most states have regulations in place that meet the intent of the requirements of the Interstate Fisheries Management Plan for Shad and River Herring. The PRT notes the following compliance issues encountered in their review of the state reports:

1. In 2019, several states allowed recreational harvest for shad and/or river herring in absence of an approved SFMP, though Amendments 2 and 3 require all states and jurisdictions to submit SFMPs for systems that remain open to commercial and recreational harvest. These issues have been resolved through the approval of the following plans:
 - Maine SFMP for American shad (2020)
 - South Carolina: Alternative Management Plan for river herring (2020)
 - Georgia: Alternative Management Plan for river herring (2020)
 - Florida: Alternative Management Plan for river herring in all state waters, and for American shad outside of the St. Johns system (2020)
2. Several states did not report on all monitoring requirements listed under Amendments 2 and 3 (see Table 6). A few states have consistently omitted the same information from compliance reports for the past few years (CT, NY, NC, GA). These states should take note of the required monitoring programs that were not reported and make a concerted effort to report all monitoring programs in future compliance reports. The most common omissions were: characterization of other losses, variance, characterization of recreational harvest, length and age frequency, and degree of repeat spawning.

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3. Many states did not submit their monitoring data in a separate Excel file along with the compliance report, as is required by Amendment 3. If data from required monitoring is provided in a separate file, the compliance report should also indicate what data were provided.

VIII. PRT Recommendations

After a thorough review of the state reports, the PRT recommends approval of the state compliance reports for the 2019 fishing year and *de minimis* requests. In addition, the PRT recommends the Board consider changes to the annual compliance report format for shad and river herring. Over the last several years the PRT and Technical Committee have continued to express concerns with the difficulty of preparing and reviewing compliance reports that contain such a large quantity of information. To streamline this process while ensuring necessary information is still reported on an annual basis, the PRT recommends the following format for annual compliance reports:

I. Introduction

Briefly highlight any significant changes in monitoring, regulations, or harvest.

II. Request for *de minimis* (If applicable)

III. Harvest and Losses

Provide a table of harvest and losses for each species, including reported commercial landings, bycatch landings, poaching, recreational harvest, catch and release mortality, fish passage mortality, discarded males, brood stock capture, research losses, etc.

V. Previous year's fishery and management program

- A. Include a copy of all current fishery regulations as an appendix to the report.
- B. Completion of Required Monitoring: include, in table format a list of each required monitoring component (fishery-dependent and -independent), whether or not it was completed for the previous year, and any additional comments (e.g. explanation of incomplete monitoring, changes to monitoring program, data caveats, or other significant information). This table should NOT include results of each monitoring component. See below for an example table.
 - a. If a state desires to provide more detailed description of changes to monitoring programs or other important information on monitoring, the state may provide this information in an additional appendix.

Required Monitoring Components	Completed? (Y/N/NA)	Additional comments
<i>Fishery Dependent Monitoring</i>		
Commercial Fishery		
Landings		
Harvest Composition		
Effort		
Recreational Fishery		
Landings		
Harvest Composition		

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Effort		
<i>Fishery Independent Monitoring</i>		
Spawning stock survey		
Calculation of mortality and/or survival estimates		
Juvenile abundance survey		
Hatchery evaluation		

- C. Sustainability evaluation: provide a description of any sustainability target/thresholds used in approved SFMPs, and indicate how metrics in the previous year compared to the approved targets/thresholds, and whether any management action will be taken in response.

VI. Planned management programs for the current calendar year

- A. Summarize regulations that will be in effect (copy of current regulations only if different from previous year).
- B. Summarize changes to monitoring programs that will be performed, only if different from previous year.

Amendment 3 requires states to annually submit all data from monitoring programs in Excel spreadsheets using the template provided at the same time as the annual report, unless determined otherwise by the Board. The PRT recommends that states continue to annually submit monitoring data in Excel only, but recommends they do not include those data in the written compliance report.

Table 6. Summary of PRT Review of 2019 State Compliance Reports.

STATE	2019 FISHERY AND MONITORING HIGHLIGHTS	UNREPORTED INFORMATION AND COMPLIANCE ISSUES
ME	<p>In 2019, counts of river herring were close to average on the Androscoggin (81,025), Sebasticook (3,287,702) Kennebec (240,594) and the Saco (55,028) rivers while the St. Croix River (486,500) was trending upward. Based on the following sustainability guidelines and Maine laws and regulations, eighteen municipal directed river herring harvests were approved by DMR in 2019. Commercial landings of river herring were the highest recorded since 2003. Severe drought conditions in 2016 are expected to impact the 2020 river herring run. 384 confirmed juvenile American shad collected among standard and experimental seining stations in various state waterways. Multiple dams on the Mousam, Union, and Little Androscoggin Rivers are in the process of FERC relicensing. Maine DMR is working with project partners to ensure alosid fish passage is being considered a priority.</p>	<p>Maintained recreational shad fishery with bag limit of 2 fish per day; Shad SFMP was approved in 2020. Representative biological sampling for shad was not conducted on Androscoggin and Saco Rivers. Low run sizes discourage handling of fish. As a result, size, age, sex composition, and mortality were not calculated. Monitoring of shad recreational fishery is minimal; information presented is unlikely to reflect actual harvest. No monitoring of RH recreational catch composition. Missing biological data characterizing the spawning stock on the St. Croix and Saco Rivers. No age samples were taken on the Saco River, so mortality was not calculated. Two summons and eleven warnings were issued for either exceeding the 25-fish limit on river herring or fishing in a closed area or during a closed period.</p>
NH	<p>The relative abundance of juvenile alewife and blueback herring declined in 2019. Various agencies are working to remove dams for the benefit of anadromous fish on the Cocheco (Gonic dams) and Bellamy (Sawyer Mill dams) Rivers. No adult American shad and only one juvenile detected by fishery independent surveys in the Exeter River in 2019. US Fish and Wildlife Service stocked 2,829,219 marked American shad fry in the Lamprey River in 2019.</p>	NA
MA	<p>143,541 river herring were counted at the Essex dam fish lift on the Merrimack River in 2019. This was above the time series average of 84,350. 4,006 gravid river herring were trapped and transported into four coastal systems within Massachusetts for restoration efforts. Additionally, 26,445 alewives were trapped in Massachusetts and released into 2 Rhode Island coastal systems (2,000 fish) and 5 New Hampshire coastal systems (24,445 fish). In 2019, MA DMF staff contributed time to approximately 25 different habitat restoration projects in various stages of development and implementation. Highlights for 2019 include the completion of a new fishway at the Draka Dam on the Three Mile River, a new fish ladder at Forge Pond Dam on the Jones River, and the improvement of fish passage at the historic Herring Brook Park. 18,653 American shad were counted at the Essex Dam fish lift on the</p>	<p>RH: MA did not implement juvenile RH abundance survey in Merrimack or Connecticut rivers. In 2019 fourteen violations (11 civil, 3 criminal) were reported by the Massachusetts Environmental Police involving illegal catching and possession of river herring. Shad: Juvenile abundance monitoring not conducted in the Merrimack River. No report of adult mortality/survival</p>

Table 6. Summary of PRT Review of 2019 State Compliance Reports.

STATE	2019 FISHERY AND MONITORING HIGHLIGHTS	UNREPORTED INFORMATION AND COMPLIANCE ISSUES
	<p>Merrimack River in 2019, below the time series average of 29,037 fish. 314,361 American shad were counted at the Holyoke Dam fish lift on the Connecticut River in 2019, above the time series average of 269,755 fish. An additional 2,401 fish were transferred to trucks for transport and 67 fish were sacrificed for agency studies. MA DMF has identified the Charles and Palmer Rivers as restoration priorities for American shad. In partnership with USFWS, MA DMF participated in a feasibility study for the removal of the Watertown Dam on the Charles River.</p>	<p>and no juvenile abundance information reported for the Connecticut River.</p>
RI	<p>During the 2019 season, 35,832 river herring passed through the Gilbert Stuart fishway, 101,714 passed through the Nonquit fishway and 38,418 were estimated at Buckeye Brook. Nonquit and Buckeye Brook increased compared to 2018, while Gilbert Stuart counts fell. CPUE of river herring in the Narragansett Bay seine survey (all life stages included) increased substantially in 2019 to the highest index value on record. Only 5 juvenile shad in 50 seine hauls were collected during the juvenile abundance survey. JAI was lower than average in 2019. 115 adult shad passed through the Potter Hill fishway on the Pawcatuck River in 2019. This is about average for years from 2005 onwards. The USFWS North Attleboro hatchery that previously provided juveniles/eggs for stocking in Rhode Island could not receive shad in 2019. As a result, 242 adult shad were stocked to Rhode Island rivers from the Connecticut River in 2019.</p>	<p>RH: 1) Pawcatuck - missing spawning stock survey, biological sampling of the spawning stock, and mortality/survival estimates; 2) Buckeye Brook - missing the accompanying biological samples for spawning stock count. Shad: No monitoring of the recreational fishery on Pawcatuck River. Did not report on progress in implementing shad habitat recommendations.</p>
CT	<p>Adult blueback herring collection efforts were not conducted by CT DEEP in 2019 due to funding and staffing shortages. The CT DEEP FD Diadromous Group is continuously pursuing opportunities to expand the population with improvements to upstream and downstream fish passage at three main stem dams and some tributary dams. 2019 represented historic lows in the number of commercial shad fishers (5), fishing trips (56), and pounds of American shad landed (5,596) in the time series. None of the three fishery independent benchmarks for shad (Lift counts, escapement, and JAI) were exceeded in 2019.</p>	<p>The commercial shad fishery was not sampled for catch composition (except for sex) and effort estimation was not provided. This was due to the small size of the fishery, limited budget, and staffing shortages. A shad creel survey was not conducted in 2019 due to budget constraints and limited staff availability. CT staff believe age structure and length frequency collected through their fishery independent monitoring efforts are representative of those in the recreational fishery.</p>
NY	<p>The 2019 JAIs for both blueback and alewife were low below their established 25th quartile benchmarks. New York will closely monitor this index over the next several years, and a proactive approach will be taken if low catch rates continue. The 2019 American shad JAI marks the fifth consecutive year below recruitment failure.</p>	<p>A river herring recreational creel survey was not conducted in 2019 due to funding constraints. Did not report on progress in implementing habitat recommendations.</p>

Table 6. Summary of PRT Review of 2019 State Compliance Reports.

STATE	2019 FISHERY AND MONITORING HIGHLIGHTS	UNREPORTED INFORMATION AND COMPLIANCE ISSUES
NJ	For blueback herring in the trawl survey the geometric mean ranked 6th out of 31 years and alewife ranked 29th. The geometric mean CPUE of American shad caught during the ocean trawl survey ranked 28th in the 31-year time series.	Did not include harvest and losses table, copy of regulations for commercial and rec fishery, nor summary of monitoring programs for following year. No review of progress in implementing habitat recommendations. Did not report on progress in implementing habitat recommendations.
PA	No juvenile river herring were sampled or recovered from Pennsylvania portions of the Susquehanna River in 2019. The lack of juvenile river herring from this survey is typical, as very few to no adult river herring successfully migrate upriver of Safe Harbor Dam. Passage of adult American Shad at Conowingo (4,787), Holtwood (570) and Safe Harbor (316) dams in 2019 continued a depressed passage trend observed since the early 2000s. Further, 2019 marked the lowest year of shad passage and catch recorded since the East Fish Lift at the Conowingo Dam began operations in 1991. However, fish lift operations in 2019 were partly impacted by two high flow events in later April and mid-May. Evaluation of otoliths for hatchery administered tetracycline marks from adult American Shad sampled in 2019 found 31.7% to be hatchery origin fish, which is third lowest proportion of hatchery fish identified in annual catches since 1989.	Did not include copy of commercial and recreational regulations that were in effect.
DELAWARE BASIN COOP	Commercial landings for American shad in the Delaware Estuary and Bay as reported to NJ in their directed fishery (18,299 lbs) for 2019 were well below average since 2000. Catch of adult American shad in Lewis Haul Seine survey was near record low in 2019, however, high river flows influenced gear efficacy. There is no estimation of recreational angler use and harvest for American shad in the Delaware River Basin for the 2019 season. There was a noticeable decrease in the Alewife YOY relative abundance in 2019 (0.12 geo mean) for Delaware's bottom trawl survey compared to 2018 (0.46 geo mean). Relative abundance of juvenile alewives and blueback herring in the Maurice River decreased in 2019 from 2018 levels.	Did not include copy of commercial and recreational regulations that were in effect. Otoliths and scales collected but not aged.
DE	The 2019 haul seine JAI of American shad increased from 2018. The 2019 adult electrofishing CPUE for American shad increased from 2018 and ranked sixth highest in 18-year time series. An estimated 858,000 American shad fry were stocked in the Nanticoke River tributaries during the spring of 2019. The geometric mean pf blueback herring increased from 2018 to the fifth lowest in the time series. Alewife abundance increased from 2018 to the eighth highest value in the time series.	No report on protected species interactions. Missing copy of regulations. No review of progress implementing habitat recommendations.

Table 6. Summary of PRT Review of 2019 State Compliance Reports.

STATE	2019 FISHERY AND MONITORING HIGHLIGHTS	UNREPORTED INFORMATION AND COMPLIANCE ISSUES
MD	<p>River Herring abundance in Nanticoke River continues to be low and sizes have decreased; North East River gillnet survey sampled 1216 river herring, with relative abundance of alewife similar to 2018 and relative abundance of blueback increasing substantially. Juvenile abundance index in Upper Chesapeake Bay showed substantial increase in 2019. Estimates of abundance for adult American shad in the lower Susquehanna River in 2019 were below those observed in 2018, and remain well below time series peak values observed in the early 2000s. Relative abundance of adult American shad in the Nanticoke River (1989-2019) is highly variable year to year, and was above the time series mean in 2019. The Potomac River (1996-2019) adult American shad abundance index has significantly increased over the time series; in 2019, relative abundance increased for the third consecutive year and reached the highest value on record. The American shad juvenile abundance index (JAI) increased in the Potomac River in 2019, while the JAI in the Upper Chesapeake Bay declined. The Potomac River American shad JAI continues to be the highest index in Maryland’s portion of Chesapeake Bay.</p>	NA
DC	<p>No juvenile shad were stocked in 2019. The fisheries research branch has been active in restoring and increasing spawning habitat in Rock Creek by removing barriers and installing a fish ladder at Pierce Mill Dam. The geometric mean for the seining survey increased for blueback herring and shad. The geometric mean for the push net survey increased for shad. The CPUE for the spawning stock survey increased for alewives and decreased for blueback herring.</p>	No ages calculated to conduct mortality or survival estimates.
PRFC	<p>The alewife index decreased to 0.06 in 2019 and the blueback herring index decreased to 0.61. There continues to be no directed harvest of RH in PRFC. The ASMFC American Shad restoration target of 31.1 for the Potomac River was exceeded for the 9th year in a row with a value of 49.0 in 2019. The YOY geometric mean index for American shad increased significantly from 7.36 in 2018 to 10.86 in 2019.</p>	NA
VA	<p>In 2019, ten weekly cruises (June to August) were conducted at night when juvenile Alosa spp. are most susceptible to surface trawling. On the Chickahominy River, a total of 184 alewives and 85 blueback herring were captured. On the Rappahannock River, a total of 220 alewives and 550 blueback herring were captured. Catches of pre-spawned alewife peaked between March 18 and April 8, with catch rates typically exceeding 0.04 fish/m/day or 0.01 kg/m/day. The American shad seine survey data on the James River showed above average recruitment in 2019. The geometric mean catch (followed by standard deviation and number of seine hauls in parentheses) of juvenile American shad captured in daylight seine hauls in 2019 was: James River, 0.13 (0.33, 65); Chickahominy River, 0.07 (0.22,</p>	Did not include in report Protected Species interactions, summary of regulations, or monitoring efforts to be performed next year.

Table 6. Summary of PRT Review of 2019 State Compliance Reports.

STATE	2019 FISHERY AND MONITORING HIGHLIGHTS	UNREPORTED INFORMATION AND COMPLIANCE ISSUES
	10); Rappahannock River, 11.65 (1.75, 35); York River, 1.28 (1.09, 95); Mattaponi River, 2.65 (1.13, 50); and Pamunkey River, 0.40 (0.80, 40).	
NC	During 2019 sampling of the 11 core seine sites, 1,783 Blueback Herring and 4 Alewives were collected. The 2019 juvenile index of abundance was 33.02 for Blueback Herring. In 2019, a total of 3,590 (211 aged) Blueback Herring were caught in the IGNS throughout the Albemarle Sound. Landings of American Shad in 2019 were the lowest on record, since 1972 and the implementation of the reduced season. During 2019 sampling of the 14 seine sites, 1,163 American Shad were captured. The 2019 American Shad arithmetic juvenile index of abundance was 7.36 fish per seine.	Due to budgetary constraints, Recreational Commercial Gear License harvest data for shad has not been collected since 2008. Did not include summary of regulatory changes for the following year.
SC	No management actions were triggered due to any sustainability benchmark exceedances for river herring during the 2019 fishing year. For American shad, the commercial CPUE for the Pee Dee Run was 1.98; therefore, this run fell below the sustainability benchmark (3.26 fish/hr). It is believed hurricanes and resulting flooding in the area are cause for this decline. If this index stays below the sustainability benchmark one more consecutive year, management action will be taken. In 2019, the commercial CPUE for the Santee River was 1.75 kg/hr; therefore, this river fell below the sustainability benchmark (1.87 kg/hr). In 2019, the CPUE for the Edisto River was 0.13; therefore, this river fell below the benchmark. If CPUE remains below the sustainability benchmark for two more years consecutively, management action will be taken. In 2019, the CPUE for the Combahee River fell below the benchmark target; if the CPUE remains below the benchmark one more year, management action will be taken.	Did not provide estimation of repeat spawning for river herring due to low catch. Did not include summary of regulatory or monitoring changes for the following year. Did not report on progress in implementing habitat recommendations.
GA	For 2019, no commercial CPUE for shad could be derived due to zero drift-net landings for Georgia in the Savannah River. GADNR gill netting efforts on the Altamaha River in 2019 resulted in a catch rate of 2.74 American Shad/100 Net ft-hrs, which is above the sustainability benchmark. American Shad CPUE for the Ogeechee River has been trending up for the past 5-year period. 2019 sample value increased 67% from 2018 sample results and is well above the benchmark.	No regulation of river herring recreational harvest in 2019, though an alternative management plan was approved in 2020.
FL	No commercial fishery exists for shad or river herring. The JAI Survey indicated that blueback herring abundance is increasing over the time series that data were collected. American shad are at the southern extent of their range in Florida. Anglers targeting American shad saw catch rates of more than one fish per hour fishing.	For river herring, state regulations allow recreational harvest though there is no approved SFMP. For shad, state regulations allow recreational harvest statewide, though not all systems are included in the SFMP.

Table 7. Reported protected species interactions (sturgeon species) in shad or river herring fisheries in 2019. Only the states listed below reported interactions.

Jurisdiction	Atlantic sturgeon		Shortnose sturgeon		Unclassified		Total by State	
	Catch	Mortalities	Catch	Mortalities	Catch	Mortalities	Catch	Mortalities
RI							Unavailable*	Unavailable*
CT					1	0	1	0
NJ	3,893 lbs**						0	0
PRFC	2	0					2	0
VA	9	0					9	0
NC	14	0					14	0
SC	19	0					19	0
GA	37	0	57	0			94	0
Total by Species	81	0	57	0	1	0	139	0

*Rhode Island reported 87 sturgeon caught in 2018. Data for 2019 from NEFOP is unavailable.

**In 2019 gill netters in New Jersey coastal waters reported discarding 3,893 pounds of sturgeon. Number of fish and mortality is unknown.



Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201
703.842.0740 • 703.842.0741 (fax) • www.asmf.org

MEMORANDUM

January 12, 2021

To: Shad and River Herring Management Board

From: Tina Berger, Director of Communications

RE: Advisory Panel Nominations

Please find attached two new nominations to the Shad and River Herring Advisory Panel – Dr. Ed Hale of University of Delaware Sea Grant and Eric Roach, a recreational angler from New Hampshire. Please review these nominations for action at the next Board meeting.

If you have any questions, please feel free to contact me at (703) 842-0749 or tberger@asmfc.org.

Enc.

cc: Caitlin Starks

M20-111

SHAD & RIVER HERRING ADVISORY PANEL

Bolded names await approval by the Shad & River Herring Management Board

January 12, 2021

Maine

River Herring:

Dennis L. Smith (rec. with background in alewife restoration)

P.O. Box 802

Northeast Harbor, ME 04662

Phone: (207) 288-5457

Email: rephish@adelphia.net

Appt. Confirmed 5/5/08

No response to March 2019 inquiry regarding continuing interest in serving on AP

Mike Thalhauser (comm)

Alewife Harvesters of Maine

13 Atlantic Avenue

Stonington, ME 04681

Phone: 207.367.2708

mthalhauser@coastalfisheries.org

Appt. Confirmed 10/30/19

Shad:

Vacancy - shad rec

New Hampshire

Shad & River Herring:

Eric Roach (rec)

54A Foggs Lane

Seabrook, NH 03874

Phone: 603.502.0928

Eroach1970@gmail.com

Massachusetts

Shad & River Herring:

Mark Amorello (rec)

P.O. Box 235

Pembroke, MA 02359

Phone: 781.831.2123

markamorello@yahoo.com

Appt. Confirmed 10/30/19

River Herring:

George "Chuckie" Green (rec/Mashpee Wampanoag Tribe)

483 Great Neck Road South

Mashpee, MA 02649

Phone (day): 508.477.0208, ext 138

Phone (eve): 774. 392.4979

Chuckie.Green@mtribe-nsn.gov

Appt. Confirmed 10/30/19

Connecticut

Shad & River Herring:

2 vacancies

New York

Shad & River Herring:

Byron Young

53 Highview Lane

Ridge, NY 11961

Phone: (631) 821-9623

Cell: (631) 294-9612

Email: youngb53@optimum.net

Appt. Confirmed 5/5/08

Chair from 1/09- 1/11

New Jersey

Shad:

Vacancy – recreational

Shad & River Herring:

Jeff Kaelin (comm. trawl and purse seine)

Lund's Fisheries, Inc.

P.O. Box 440

Winterport, ME 04496-0440

Phone: (207) 266-0440

jkaelin@lundsfish.com

Appt Confirmed 8/20/09

Pennsylvania

Vacancy

Delaware

Shad & River Herring:

1 vacancy

Dr. Edward Hale

Delaware Sea Grant

23 Gosling Drive

Lewes, DE 19958

Phone: 302.470.3380

EHale@udel.edu

Maryland

Shad & River Herring:
Vacancy - recreational

Virginia

Shad & River Herring:
Vacancy
Shad:
Vacancy

North Carolina

River Herring:
Louis Ray Brown, Jr. (rec)
212 Walnut Creek Drive
Goldsboro, NC 27534
Phone (day): (919) 778-9404
Phone (eve): (919) 778-9792
Email: lrbrown@nc.rr.com
Appt. Confirmed 5/5/08; 8/18

Vacancy – commercial

South Carolina

Shad:
Thomas M. Rowe, Jr. (rec)
4625 Flounder Lake Drive
Meggett, SC 29449
Phone: 843-908-0247
FAX: 843-549-7575
Email: thomasmrowe@hotmail.com
Appt Confirmed 8/3/10

Vacancy – commercial net

Georgia

River Herring:
Fulton Love (dealer)
6817 Basin Road
Savannah, GA 31419
Phone: (912)925-3616
FAX: (912)925-1900
Appt. Confirmed 10/30/95
Appt. Reconfirmed 9/8/99
Appt. Reconfirmed 3/19/08
No response to Sept 2017 or March 2019 inquiry regarding continuing interest in serving on AP

Florida

Shad & River Herring:
2 vacancies

Potomac River Fisheries Commission

River Herring:
Kevin L. Gladhill (rec)
21370 Mount Lena Road
Boonsboro, MD 21713
Phone (day): (301)988-6697
Phone (eve): (301)714-1074
Email: KLGladhill@myactv.net
Appt. Confirmed 5/5/08
No response to Sept 2017 or March 2019 inquiry regarding continuing interest in serving on AP

Vacancy – commercial pound net

District of Columbia

Shad:
Joe Fletcher (rec)
1445 Pathfinder Lane
McLean, VA 22101
Phone (day): (202)244-0461
Appt. Confirmed 10/30/95
Appt. Reconfirmed 9/15/99
Appt. Reconfirmed 4/21/08
No response to Sept 2017 inquiry regarding continuing interest in serving on AP

Nontraditional Stakeholders

Chair, Pam Lyons Gromen (fisheries conservation) (1/11)
Executive Director
Wild Oceans
1793 Sandy Court
Springboro, Ohio 45066
Phone: 240.405.6931
Email: plgromen@wildoceans.org
Appt. Confirmed 5/5/08

Alison A. Bowden
Freshwater Program Director
The Nature Conservancy
205 Portland St, Suite 400
Boston, MA 02114
Phone (day): (617) 227-7017 x351

Phone (eve): (617)678-6135
FAX: (617) 227-7688
Email: abowden@tnc.org
Appt. Confirmed 5/5/08
Confirmed interest in March 2019



ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (All Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2). In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.**

Form submitted by: _____ State: _____
(your name)

Name of Nominee: _____

Address: _____

City, State, Zip: _____

Please provide the appropriate numbers where the nominee can be reached:

Phone (day): _____ Phone (evening): _____

FAX: _____ Email: _____

.....
FOR ALL NOMINEES:

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.

1. _____

2. _____

3. _____

4. _____

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?

yes _____ no _____

3. Is the nominee a member of any fishermen's organizations or clubs?

yes _____ no _____

If "yes," please list them below by name.

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business? _____ years
2. Is the nominee employed only in commercial fishing? yes_____ no_____
3. What is the predominant gear type used by the nominee?_____
4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)?_____

FOR CHARTER/HEADBOAT CAPTAINS:

1. How long has the nominee been employed in the charter/headboat business? _____ years
2. Is the nominee employed only in the charter/headboat industry? yes _____ no_____
- If “no,” please list other type(s)of business(es) and/occupation(s):_____
- _____
3. How many years has the nominee lived in the home port community? _____ years
- If less than five years, please indicate the nominee’s previous home port community.
- _____

FOR RECREATIONAL FISHERMEN:

1. How long has the nominee engaged in recreational fishing? _____ years
2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? yes _____ no _____

If "yes," please explain.

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing? _____ years
2. Is the nominee employed only in the business of seafood processing/dealing?
yes _____ no _____ If "no," please list other type(s) of business(es) and/or occupation(s):

3. How many years has the nominee lived in the home port community? _____ years
If less than five years, please indicate the nominee's previous home port community.

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? _____ years
2. Is the nominee employed in the fishing business or the field of fisheries management?
yes _____ no _____

If "no," please list other type(s) of business(es) and/or occupation(s):

FOR ALL NOMINEES:

In the space provided below, please provide the Commission with any additional information which you feel would assist us in making choosing new Advisors. You may use as many pages as needed.

Nominee Signature: Edward A. Hale Jr., Ph.D.

Date:

Name: _____
(please print)

COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)

State Director

State Legislator

Governor's Appointee



ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (All Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2). In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.**

Form submitted by: Cheri Patterson State: New Hampshire
(your name)

Name of Nominee: ERIC E. ROACH

Address: 54A FOLGGS LANE

City, State, Zip: SEABROOK, NH 03874

Please provide the appropriate numbers where the nominee can be reached:

Phone (day): 603-502-0928

Phone (evening): 603-502-0928

FAX: N/A

Email: EROACH1970@GMAIL.COM

FOR ALL NOMINEES:

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.

1. River Herring and Shad
2. _____
3. _____
4. _____

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?

yes _____ no

3. Is the nominee a member of any fishermen's organizations or clubs?

yes no _____

If "yes," please list them below by name.

PLUM ISLAND SURFCASTERS

4. What kinds (species) of fish and/or shellfish has the nominee fished for during the past year?

AMERICAN SHAD

BROOK TROUT

STRIPED BASS

SMALLMOUTH BASS

BWEIFISH

5. What kinds (species) of fish and/or shellfish has the nominee fished for in the past?

ATLANTIC SALMON

RAINBOW SMELT

LANDLOCKED SALMON

WHITE PERCH

LARGEMOUTH BASS

FOR COMMERCIAL FISHERMEN:

1. How many years has the nominee been the commercial fishing business? _____ years
2. Is the nominee employed only in commercial fishing? yes _____ no _____
3. What is the predominant gear type used by the nominee? _____
4. What is the predominant geographic area fished by the nominee (i.e., inshore, offshore)? _____

FOR CHARTER/HEADBOAT CAPTAINS:

1. How long has the nominee been employed in the charter/headboat business? _____ years
2. Is the nominee employed only in the charter/headboat industry? yes _____ no _____
If "no," please list other type(s) of business(es) and/occupation(s): _____

3. How many years has the nominee lived in the home port community? _____ years
If less than five years, please indicate the nominee's previous home port community.

FOR RECREATIONAL FISHERMEN:

1. How long has the nominee engaged in recreational fishing? 30 years
2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? yes no

If "yes," please explain.

CLERK AT ELDREDGE BROS. FLY SHOP, YORK, ME (2015-2016)
MANAGER OF DOMESTIC, SINGLE-MEMBER LLC: WATERSHED CUSTOM TACKLE
(REGISTERED IN NH ON 1/6/21)

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing?
_____ years
2. Is the nominee employed only in the business of seafood processing/dealing?
yes _____ no _____ If "no," please list other type(s) of business(es) and/or occupation(s):

3. How many years has the nominee lived in the home port community? _____ years
If less than five years, please indicate the nominee's previous home port community.

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? _____ years
2. Is the nominee employed in the fishing business or the field of fisheries management?
yes _____ no _____

If "no," please list other type(s) of business(es) and/or occupation(s):

FOR ALL NOMINEES:

Atlantic States Marine Fisheries Commission

Bluefish Management Board

February 4, 2021

12:45 – 1:30 p.m.

Webinar

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

- | | |
|---|------------|
| 1. Welcome/Call to Order (<i>C. Batsavage</i>) | 12:45 p.m. |
| 2. Board Consent | 12:45 p.m. |
| • Approval of Agenda | |
| • Approval of Proceedings from August 2020 | |
| 3. Public Comment | 12:50 p.m. |
| 4. Consider Revisions to the Addendum I Biological Monitoring Program
(<i>D. Colson Leaning</i>) Final Action | 1:00 p.m. |
| 5. Review and Populate Advisory Panel Membership (<i>T. Berger</i>) Action | 1:25 p.m. |
| 6. Other Business/Adjourn | 1:30 p.m. |

MEETING OVERVIEW

Bluefish Management Board
Thursday February 4, 2021
12:45 – 1:30 p.m.
Webinar

Chair: Chris Batsavage (NC) Assumed Chairmanship: 12/19	Technical Committee Chair: Mike Celestino (NJ)	Law Enforcement Committee Representative: Rob Kersey (MD)
Vice Chair: Joe Cimino (NJ)	Advisory Panel Chair: Vacant	Previous Board Meeting: December 15, 2020
Voting Members: ME, NH, MA, RI, CT, NY, NJ, DE, MD, PRFC, VA, NC, SC, GA, FL, NMFS, USFWS (17)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from August 2020

3. Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time should use the webinar raise your hand function and the Board Chair will let you know when to speak. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance, the Board Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Consider Revisions to the Addendum I Biological Monitoring Program (1:00-1:25 p.m.)

Background

- In December 2020, the Bluefish Technical Committee (TC) presented a memo to the Bluefish Board with recommendations for changes to the Addendum I biological monitoring program. **(Supplemental Materials)**
- Following this meeting, it was determined that the revisions to the biological monitoring program could take place through Board Action. **(Supplemental Materials)**

Presentations

- Recommended revisions to the biological monitoring program by D. Colson Leaning

Board Actions for Consideration

- Consider approving revisions to the Addendum I Biological Monitoring Program

5. Review and Populate Advisory Panel Membership (1:25-1:30 p.m.)

Background

- John LaFountain from RI has been nominated to the Bluefish Advisory Panel

Presentations

- Nominations by T. Berger

Board Actions for Consideration

- Approve nomination

6. Other Business/Adjourn

Bluefish Technical Committee Task List

Activity Level: Medium

Committee Overlap Score: Medium

Committee Task List

- Meets twice a year to recommend commercial and recreational measures
- Spring 2021: Annual biological monitoring program requirement to collect a minimum of 100 bluefish to enhance age and length data used in stock assessments
- Annual state compliance reports are due May 1

TC Members

Michael Celestino (NJ DEP – Chair), Sam Truesdell (MA DMF – Vice-Chair), Amy Zimney (SC DNR), Sandra Dumais (NY DEC), Eric Durell (MD DNR), Jim Gartland (VA VIMS), Kurt Gottschall (CT DMF), BJ Hilton (GA DNR), Nicole Lengyel (RI DEM), Joseph Munyandorero (FL FWC) David Behringer (NC DMF), Melissa Smith (ME DMR), Kevin Sullivan (NH FGD), Richard Wong (DE DFW), Tony Wood (NEFSC), Matt Seeley (MAFMC)

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
BLUEFISH MANAGEMENT BOARD AND
MID-ATLANTIC FISHERY MANAGEMENT COUNCIL**

**Webinar
August 6, 2020**

These minutes are draft and subject to approval by the Bluefish Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the Bluefish Management Board and
Mid-Atlantic Marine Fisheries Council Meeting Webinar
August 2020

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Review of the PDT/FMAT Discussion Document on Bluefish Allocation and Rebuilding Draft Amendment.....	1
Provide Guidance to the FMAT on the Bluefish Allocation and Rebuilding Draft Amendment	20
Consider Approval of the FMP and State Compliance for Bluefish for the 2019 Fishing Year	34
Adjournment.....	35

INDEX OF MOTIONS

1. **Approval of agenda** by consent (Page 1).
2. **Approval of proceedings of May 6, 2020** by consent (Page 1).
3. **Move to remove recreational for-hire sector separation from further development in the bluefish amendment. Further development of for-hire sector separations should be considered under comprehensive recreational reform initiatives.**
Board: Motion by Adam Nowalsky; second by Eric Reid (Page 28). Motion carried (14 in favor, 1 opposed) (Page 30).
Council: Motion by Adam Nowalsky; second by Joe Cimino. Motion carried by consent (Page 31).
4. **Move to approve PRT recommendations, the Bluefish Fishery Management Plan Review of the 2019 fishing year, state compliance reports, and *de minimis* requests for Maine, South Carolina and Georgia's commercial fisheries** (Page 35). Motion by Nichola Meserve; second by Justin Davis. Motion carried (Page 35).
5. **Adjourn** by consent (Page 35).

Draft Proceedings of the Bluefish Management Board and
Mid-Atlantic Marine Fisheries Council Meeting Webinar
August 2020

ATTENDANCE

Board Members

Megan Ware, ME, proxy for P. Keliher (AA)	John Clark, DE, proxy for D. Saveikis (AA)
Cheri Patterson, NH (AA)	Roy Miller, DE (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Bill Anderson, MD (AA)
Nichola Meserve, MA	Mike Luisi, MD, MAFMC Chair
Raymond Kane, MA (GA)	Russell Dize, MD (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)	Phil Langley, MD, proxy for Del. Stein (LA)
Jason McNamee, RI (AA)	Ellen Bolen, VA, proxy for S. Bowman (AA)
Eric Reid, RI, proxy for Rep. Sosnowski (LA)	Chris Batsavage, NC, ASMFC Chair
Justin Davis, CT (AA)	Mel Bell, SC, proxy for P. Maier
Maureen Davidson, NY, proxy for J. Gilmore (AA)	Sen. Ronnie Cromer, SC (LA)
Emerson Hasbrouck, NY (GA)	Hannah Hart, FL, proxy for J. McCawley (AA)
Joe Cimino, NJ (AA)	Doug Haymans, GA (AA)
Tom Fote, NJ (GA)	Marty Gary, PRFC
Adam Nowalsky, NJ, proxy for Asm. Houghtaling (LA)	Mike Ruccio, NMFS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Mike Celestino, Technical Committee Chair

Staff

Bob Beal	Jeff Kipp
Toni Kerns	Sarah Murray
Laura Leach	Joe Myers
Dustin Colson Leaning	Kirby Rootes-Murdy
Kristen Anstead	Mike Schmidtke
Max Appelman	Matt Seeley, MAFMC
Maya Drzewicki	Caitlin Starks
Sarah Hylton	Deke Tompkins
Chris Jacobs	Geoff White

Guests

Fred Akers	Erika Burgess, FL FWC
John Almeida, NOAA	Morgan Corey, NOAA
Pat Augustine, Coram, NY	Karson Courtre, MAFMC
Michael Auriemma, NJ DEP	Kiley Dancy, MAFMC
Joey Ballenger, SC DNR	Jessica Daher, NJ DFW
Julia Beaty, MAFMC	Jeff Deem, Lorton, VA
Alan Bianchi, NC DNR	Monty Deihl, OceanFleet Svc
Jason Boucher, DE DFW	Greg DiDomenico, Garden State Seafood
William Brantley, NC DNR	Anthony DiLernia
Jeff Brust, NJ DFW	Steve Doctor, MD DNR

These minutes are draft and subject to approval by the Bluefish Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the Bluefish Management Board and
Mid-Atlantic Marine Fisheries Council Meeting Webinar
August 2020

Guests (continued)

Michelle Duval	Brandon Muffley, MAFMC
Warren Elliott, PA (LA)	Steve Murphey, NC (AA)
Dan Farnham	Allison Murphy, NOAA
Cindy Ferrio, NOAA	Ken Neill
James Fletcher, Wanchese Fish	Brian Neilan, NJ DFW
Jared Flowers, GA DNR	Jeff Nichols, ME DMR
Tony Friedrich, SGA	Laurie Nolan
Mel Gardner	Derek Orner, NOAA
Matthew Gates, CT DEEP	Rich Pendleton, NYS DEC
Pat Geer, VMRC	Michael Pentony, NOAA
Angela Giuliano, MD DNR	Mariah Pflieger, Oceana
Brooke Goggins, CPB	Olivia Phillips, VMRC
Willy Goldsmith, SGA	Paul Piavis, MD DNR
Kurt Gottschall, CT DEP	Nicholas Popoff, US FWS
Sonny Gwinn, Berlin, MD	Jill Ramsey, VMRC
Brian Hall, NC DENR	Paul Risi
Steve Heins	Matthew Rogers, VMRC
Dewey Hemilright	Mary Sabo, MAFMC
Kyle Hoffman, SC DNR	Scott Sakowski, NOAA
Asm. Eric Houghtaling, NJ (LA)	Brandi Salmon, NC DENR
Rusty Hudson, DSF	C J Schlick, NC DENR
Peter Hughes, AtlanticCapes	Tara Scott, NOAA
Jeff Kaelin, Lund's Fisheries	Alexei Sharov, MD DNR
Emily Keiley, NOAA	Somers Smott, VMRC
Alexa Kretsch, VMRC	David Stormer, DE DFW
Kris Kuhn, PA F&B	H. Takade-Heumacher, EDF
Scott Lenox	Mark Terceiro, NOAA
Tom Little, NJ LEG	Wes Townsend
Dee Lupton, NC DNR	Corinne Truesdale, RI DEM
Loren Lustig, PA (GA)	Sam Truesdell, MA DMF
Chip Lynch, NOAA	Mike Waine, ASA
Shanna Madsen, VMRC	DeVonte Weems
John Maniscalco, NYS DEC	Kate Wilke, TNC
Casey Marker	Angel Willey, MD DNR
Genine McClair, MD DNR	Sara Winslow
Ashleigh McCord, NOAA	Charles Witek, W Babylon, NY
Dan McKiernan, MA (AA)	Chris Wright, NOAA
José Montañez, MAFMC	Amy Zimney, SC DNR
Chris Moore, MAFMC	

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The Bluefish Management Board of the Atlantic States Marine Fisheries Commission and Mid-Atlantic Fishery Management Council (MAFMC) convened via webinar; Thursday, August 6, 2020, and was called to order at 8:30 a.m. by Chairmen Chris Batsavage and Michael Luisi.

CALL TO ORDER

CHAIRMAN CHRIS BATSAVAGE: Good morning! I would like to welcome everyone to the joint meeting with the ASMFC Bluefish Management Board and the Mid-Atlantic Fishery Management Council. My name is Chris Batsavage. I am the Board Chair from North Carolina, the Administrative Proxy.

With me co-chairing today is Mike Luisi, the Mid-Atlantic Council Chair. Before I start going through the agenda, let's go through the normal housekeeping items for joint meetings. Since we're operating as a joint body, any motions that are made today, and I'm not sure there will be any, will need motions from both the Board and the Council, in order to debate the motion, and both will need to pass by both the Board and Council for it to move forward.

What we also do again, if we have motions today, is we'll alternate between which body goes first, in terms of voting, just to kind of balance things out. As always, the Board will be given time to caucus, and each state should have a designated Commissioner to cast the vote for their state. Mike, is there anything, any introductory comments you want to add, or things that I forgot before we get moving through the agenda?

CHAIRMAN MICHAEL LUISI: No, I think you covered it, Chris. Again, my name is Mike Luisi. I'll be co-Chairing today with Chris, and then later on with Adam Nowalsky, when we switch boards. No, Chris, I think you got it all. I just want to welcome everybody, and I look forward to the discussion today. It's all you, Chris.

APPROVAL OF AGENDA

CHAIRMAN BATSAVAGE: We'll move on to the approval of the agenda. Everyone got a chance to look at that. Are there any changes to the agenda, or additions to the agenda that anyone would like to make?

MS. KERNS: I don't see any hands raised.

APPROVAL OF PROCEEDINGS

CHAIRMAN BATSAVAGE: We'll consider that approved. Next is approval of the proceedings from the May 2020 meeting. Are there any changes, modifications, et cetera to the proceedings?

MS. KERNS: I do not see any hands raised.

CHAIRMAN BATSAVAGE: Okay then, we'll consider those approved.

PUBLIC COMMENT

CHAIRMAN BATSAVAGE: Next is public comment. This is an opportunity for the public to provide any comments on items that are not on the agenda. I'll pause here to see if any public would like to provide any comment at this time.

MS. KERNS: As a reminder, to raise your hand you just push on that hand button for the public. I don't see any hands.

**REVIEW OF THE FISHERY MANAGEMENT
ACTION TEAM DISCUSSION DOCUMENT ON
BLUEFISH ALLOCATION AND REBUILDING
DRAFT AMENDMENT**

CHAIRMAN BATSAVAGE: Moving on, the next item is a Review of the Fishery Management Action Team Discussion Document on Bluefish Allocation and Rebuilding Draft Amendment. Dustin Colson Leaning from the Commission, and Matt Seeley from the Council will be presenting that information today, so Dustin and Matt, it's all yours.

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MR. MATT SEELEY: Good morning, this is Matt, just making sure I get my screen and everything shows appropriately. Mr. Chairman, do you see the full screen presentation there?

CHAIRMAN BATSAVAGE: Yes, I do Matt, thanks.

MR. SEELEY: You can hear me okay? I've been having some audio issues with my phone, and if that does happen, please interrupt me as soon as you can tell, and I can backtrack. Good morning everyone. I know Dustin and myself were excited to talk to you about the Atlantic Bluefish Amendment here, and the progress that Fishery Management Action Team has been making.

I'm going to start the presentation and go through the first five issues, and then Dustin is going to take control after, and go through the remaining issues within the amendment, and then we'll conclude with some next steps, and then we'll take any questions that you have, so thank you. Here is a snapshot reminder of the timeline that this amendment is on.

While not a complete timeline, this shows some of the big steps taken thus far in blue, followed by upcoming big steps in the amendment process in green. The 2019 Operational Assessment indicated that the stock was overfished, and NOAA Fisheries released the overfished designation in November of 2019.

This began the two-year timeline for when a rebuilding plan must be implemented, and the goal is to have final action in the spring of 2021, so that the Rebuilding Plan can be implemented by the spring of 2022. As of now we have ten amendment issues that are being addressed through this action.

For the purpose of this meeting and insuring the FMAT receives all the information they need, we'll only be discussing the underlying issues. However, if you do have comments or concerns on any issues that we're not discussing today, we're happy to address those

comments via e-mail, and then again, all ten issues will be discussed at the joint December meeting. For each issue we present, we'll provide some background, tables, and then the FMAT recommendations and questions for the Council and Board. Starting with Issue 2, the Sector Allocations. Under the current fishery management plan for bluefish the acceptable biological catch equal to fishery level annual catch limit, which is then divided into a commercial and recreational annual catch target, based on the allocation percentages that are defined in the FMP. The percentages are currently 83 percent recreational, and 17 percent commercial.

Sector specific expected discards are subtracted from the sector-specific ACTs to derive a commercial quota and recreational harvest limit. Aside from the status quo option, the following approaches revise the allocation percentages, based on modified base years or different datasets. As background, we have two sets of sector allocation alternatives, both using four different time series, plus the status quo alternative.

The top alternative set is based on catch data using the MRIP discards, while the bottom alternative set is based on landings data. As you can see, some of the time series result in the same exact allocation percentages. We hope to soon slim down the alternative sets at the joint meeting in December.

For this presentation, we wanted to focus on the recommendations related to phasing in allocation changes, and implementing a trigger approach. Currently, both sectors are greatly impacted by a reduced quota, due to the overfished designation, and since recreational to commercial sector transfers have been set to zero.

Furthermore, the alternative currently in development for this amendment decreased the commercial allocation. To deal with these lower quotas, phasing in allocation changes

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allows for commercial and recreational allocation percentages to transition slowly over time, which we're hoping has the potential to reduce some economic burden.

When considering the potential to phase in allocations, the FMAT recommends streamlining a phase-in timeline with a rebuilding timeline, and noted that changing allocations on a continual basis during the rebuilding plan may unnecessarily overcomplicate management. The FMAT also discussed what an appropriate trigger threshold level would be, once the quotas increase post-rebuilding plan.

The FMAT is concerned about the tradeoff between the perceived benefit and added complexity, and ultimately noted that a trigger approach is most likely not an appropriate management tool during rebuilding. Considering a post rebuilding bluefish world, the FMAT has tried to answer the question, what is an appropriate trigger threshold level?

The main considerations are that recent biomass levels have remained low. Using an average ABC approach may not be appropriate. The FMAT also noted that the reallocation scheme above at triggered threshold seems to be more of a policy decision, and the FMAT was unsure of how to reallocate.

We'll have these summary tables at the end of each issue that we discuss. To summarize the approaches being discussed within the sector allocations, the FMAT recommends keeping the phase-in approach for further development, and that the selected duration to phase in allocations should be streamlined with the preferred rebuilding plan. For the trigger approach, the FMAT recommends that it be removed from further consideration in the amendment, but the FMAT would like to see a provision included that would allow future implementation via a framework. Issue 3 is the commercial allocations for the states. There are three topics we need to discuss under this issue,

a phase-in approach and a trigger approach, which we just discussed under sector allocations, and minimum default allocations.

As background, this table represents the six different allocation alternatives using landings data. Unlike the sector allocations, many of these alternatives differ significantly from each other, so you know pay close attention to the specific time series and the percentages that are evident there, and again happy to come back to any of these slides at any time.

The first topic under Issue 3 is again the phase-in approach, and the FMAT noted that the same comments under the sector allocations apply here for the commercial allocations to states. Again, the commercial sector is greatly impacted by a reduced quota, and to deal with these lower quotas phasing in allocation changes allows for commercial state allocation percentages to transition slowly over time.

Again, hopefully with the potential to reduce some economic burden. The FMAT recommends streamlining a phase-in timeline with the rebuilding timeline, and noted that changing allocations on a continual basis again, may overcomplicate management. The second topic under Issue 3 is again the trigger approach.

Here we're presenting the baseline, or status quo bluefish state allocations under a 20-year, 10-year and 5-year average commercial quota as the trigger point. Staff proposed three options for the FMAT, with how additional commercial quota above a trigger could be allocated to the states. Under these examples, states with currently less than 1 percent of the coastwide quota would receive either 0.05 percent, 0.01 percent, or 0.25 percent of the additional quota.

Then other states would evenly split the remaining allocation. Those are those three columns that you see there, Option 1, 2, and 3 using the different allocation percentages that

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could be split up, based on the baseline quota. Some of the FMAT comments that applied, the same comments under the sector allocations apply here for the commercial allocations to the states.

The discussions surrounding an appropriate trigger threshold level led to the FMATs concern about the tradeoff between the perceived benefit and added complexity. However, the main considerations in trying to develop an appropriate trigger seemed to be more of a policy decision, especially since recent biomass levels have remained low, and using an average ABC approach may not be appropriate.

Therefore, the FMAT was unsure of how to reallocate in order to refine the equity across states. Overall, the FMAT does recommend further development of this approach. To deal with some of the equity issues we're talking about. The FMAT recommended staff develop a range of baseline quotas, and the associated additional quota allocation.

The justification behind this was, because states with a very small baseline allocation should not receive the same amount of additional quota as states that have a very large baseline quota. Under this example, the FMAT proposed that if a state's baseline quotas were 0 to 1 percent, they would receive 0.25 percent of the additional quota. From 1 to 5 percent, a state would receive 3 percent of the additional quota, and finally a baseline quota greater than 5 percent would result in 12.86 percent of the additional quota, which is the remainder of the allocation split evenly amongst states.

To summarize, the FMAT recommends further development of the trigger approach for the commercial allocations to the state. Now the third topic under Issue 3 is the ability to implement minimum default allocation. This was developed by the FMAT as a result of a recommendation from a Board member at the last joint meeting.

To develop these alternatives the FMAT modeled the approach off Amendment 3 for Atlantic menhaden. These alternatives apply a fixed-minimum quota, and the FMAT used a range of percentages from 0.1 to 1 percent. Then the remainder of the total allowable landings was allocated, based on the average landings, using the time series selected by the Council and Board for this amendment.

Provided here is an example of minimum default allocations, using 0.1 percent, and all of the other alternatives are within the FMAT summary as part of your briefing materials for the different ranges of percentages I was referring to. Towards the left of the table you see the true status quo allocations.

These are the current allocations that are existing in the FMP, with no minimum default allocation included. Then you see the status quo alternative, but with a minimum default allocation of 0.1 percent applied, and this is why the percentages are different. Then the remaining columns all also apply the same 0.1 percent to each proposed time series.

Ultimately, the FMAT recommends this remain in the amendment for further development. To summarize the approaches being discussed within the commercial allocations to the states, the FMAT recommends the phase-in approach be kept for further development, and streamlined with a preferred rebuilding timeline.

The trigger approach should also be kept for further development, but with refined equity across states. Staff has been going back and forth with the FMAT. The next FMAT meeting it will be further developed, that way we can have more detailed examples for you at the subsequent meeting. For minimum default allocations, the FMAT noted that the current alternatives include a sufficient range of percentages, and should be kept for further development.

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The FMAT also reviewed the proposal made by the state of Florida to implement regional-based allocations. This is now Issue 4. The proposal pools quota between states that occupy the same region, and the proposal stipulates that commercial trip limits could be used to ensure that all states have access to the resource.

The allocation percentages in the table also use the same time series that were presented for the other allocation-related issues in the amendment. The regionalization follows the initial logical geographic approach. We have New England, Mid-Atlantic, South Atlantic. The FMAT then noted that this could create a race to fish situation within a given region that could cause states to not hold as much interest in this approach. The FMAT then commented that the proposed geographic regions have no biological basis, so the FMAT is interested in identifying if there is a biological basis, and noted that if there is not, the regional approach may have less technical merit and should be removed from further development.

The FMAT further commented that the regional commercial allocations and the associated trip limits would require a high level of state cooperation and buy-in, and there is also concern that the regulations regarding commercial trip limits and transfers may be challenging to coordinate across states in each region.

Finally, the FMAT noted there would be a loss of autonomy and flexibility to manage fisheries at the state level. To help develop appropriate trip limits for a given region, the FMAT looked at the amount of trips landing quota in specific pound bins. As you can see in New England, the Mid-Atlantic and the South Atlantic, more than 94 percent of all trips in each year landed less than 500 pounds.

Using the trends present in the top table, and the current state commercial trip limits, staff developed the proposed trip limits in the

bottom table for FMAT discussion. Upon FMAT review, the group recommended staff redevelop the top table to display each trip limit bins percent contribution to the total landings for that year, instead of as a percentage of trips.

This will help identify if the majority of bluefish landings are coming from a small number of trips with very high landings, or many trips with a low amount of landings. Furthermore, the FMAT recommended reassessment of the proposed trip limits once the landings data have been analyzed.

Alternatively, to the regional commercial allocation approach, we wanted to emphasize that there are provisions in the current regulations for states to combine quotas, should they be interested. Any state may do so outside of this amendment on a voluntary case-by-case basis. The FMAT confirmed with GARFO that this regulatory language may still be applied.

States that want to combine quotas will need to write a joint letter to the Regional Administrator, and once approved the two or more states joint quota will be monitored as a combined entity. There are technically provisions currently in place that allow for these combined quotas. Now to summarize the Regional Commercial Allocations. The FMAT noted that they will evaluate whether the regional approach has biological basis.

Lacking biological backing the FMAT would recommend removal, especially considering regional allocation will lead to a loss of autonomy and reduce flexibility for states to manage their own fisheries. The Bluefish Advisors were mainly in support of further exploring regional allocations. Again, pending the associated management measures.

In considering trip limit step downs, the FMAT recommended staff refine the trip limit analysis to identify if most bluefish landings are coming from a small number of trips with very high

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landings, or many trips with a low amount of landings. Then we're going to reassess the proposed trip limits, and come back to you with more information here at that meeting.

Transitioning to Issue 5, the rebuilding plan. The Fishery Management Action Team wanted to again emphasize that adjustments to the Council's Risk Policy are necessary under Alternatives 5.3, 4, and 5. This is the only way that the Council and Board can consider a rebuilding plan longer than five years, and allow the higher associated catches. The FMAT also discussed the concerns raised by the Council and Board at the last meeting, in regards to the cyclical nature of bluefish abundance, and the influence that forage fish and the environment have on the species ability to rebuild biomass to the target, within the specified timeline.

The FMAT recognizes these concerns and the role that the calibrated MRIP estimates have had on the stock assessment. However, there was consensus that we need to wait, and at least see how the rebuilding plan initially performs. The FMAT noted that if the rebuilding plan is found to be making inadequate progress.

Adjustments can be made to the plan that include more restrictive management measures, and potentially increased funding for research, to understand why a rebuilding plan is not going as initially proposed. But ultimately, NOAA Fisheries has specific qualification criteria to assess if adequate rebuilding progress has been made, and there was consensus among the FMAT that it is important to first address fishing mortality, and then reassess.

As more data becomes available and stock assessment updates are conducted, the biological reference points may change and shift stakeholder perspective on the rebuilding process. But overall, this rebuilding plan should be thought of as a living plan, as it's regularly reviewed and revised when necessary.

You've seen this figure before. Magnuson-Stevens Act requires that a rebuilding plan be submitted to NOAA Fisheries by the end of September 2021. This will allow for implementation during the 2022 fishing year. Here we're presenting catch on the left, and biomass on the right for each rebuilding projection. Each color corresponds to a different rebuilding plan, and the colors are consistent on both figures. As you can see on the catch figure to the left, each rebuilding projection has different sets of catch over the rebuilding duration.

On the biomass figure to the right all projections have reached the spawning stock biomass MSY target of about 200,000 metric tons by 2031, which is within our ten-year timeline. Upon review during the Advisory Panel meeting, most bluefish Advisors commented that they prefer a longer rebuilding timeline, to encourage higher catches and stability within the fisheries.

In summary, there are five rebuilding projections to be considered, with an understanding that the constant fishing mortality or constant harvest scenarios will be updated next year, when a new assessment is available. This will include how long it will take to rebuild under an updated constant fishing mortality, or a constant harvest scenario, and should stay within the proposed duration. I'm going to transfer things over to Dustin now.

MR. DUSTIN COLSON LEANING: Same thing goes for me as well, if my audio starts breaking up, please do let me know. I'll be covering Issue 6, which addresses for-hire sector separation. As we have discussed before, there are three different potential structures for division of for-hire versus private allocation, not including the status quo alternative. This would take place at the ACL level, the Sub-ACL level, and the RHL level.

The allocation structures have different implications for accountability in the

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development of allocation percentages, and I will go over the pros and cons in the coming slides. Displayed here are status quo on the upper left, and the three different flowchart structures, for how the sector separation could occur. Option A is the current structure in the bluefish FMP, Option B would require the development of commercial and recreational and for-hire allocation alternatives.

Option C would maintain allocation between the commercial and recreational sectors, but then the recreational ACLs would be allocated between the private and for-hire sectors. Then Option D would split the RHL into two separate RHLs for the private and for-hire sectors. The FMAT recommends removal of Structure B.

The FMAT was concerned that this structure would require starting from scratch, in terms of developing allocations between all three sectors, when we have already developed alternatives that allocate between just two sectors, the commercial and recreational fisheries. The FMAT also recommends removal of Structure D, which includes separate management of harvest only, and accountability is problematic under this structure.

The FMAT recommends development of Structure C, where accountability measures are applied at the Sub-ACL level, and this option represents a true sector separation. I have prepared a scenario to demonstrate why accountability is problematic under Structure D, and hopefully this will shed some light on just the sector separation process in general.

You will notice that I have removed the commercial sector portion here, to simplify this example. In this example the recreational ACL is set at 18 million pounds under both structures, as noted in the bolded text. In Structure C, the two sectors allocated their own Sub-ACLs, and the private angler sector receives 12 million pounds, and the for-hire sector receives 6 million pounds.

Each sector's Sub-ACL are reduced slightly to account for discards. This results in the private angler sector RHL equaling 10 million pounds, and the for-hire sector RHL equaling 5 million pounds. In Structure D on the right, the recreational RHL is reduced to 50 million pounds to account for discards, and then the RHL is split. The private angler sector is allocated 10 million pounds and the for-hire sector is allocated 5 million pounds.

You notice that the resulting RHLs under both structures are the same. Let's say in this example that the private angler sector lands 10 million pounds. The corresponding RHLs under each structure are shaded in green, to represent that this sector harvested within its landing limits. Additionally, the private sector discarded 2 million fish. The private angler Sub-ACL is then highlighted in green under Structure C, to demonstrate that the Sub-ACL was not exceeded. Taking this example further, let's say that the for-hire sector also stays within its landings limit for the year by harvesting 5 million pounds of fish, so far so good under each structure. Unfortunately, in this example, let's just say that the for-hire sector also had higher than projected level of discards, with 2 million pounds of discards. On the left we can see that the for-hire Sub-ACL has been exceeded, as displayed in red. On the right under Structure D, we see that the recreational ACL was exceeded when you add up both sectors landings and discards.

Under Structure C, accountability measures in the form of a pound for pound payback would be applied to only the for-hire sector, due to its overage. The problem with sector separation Structure C becomes clear when you look at the right. Because the recreational ACL was exceeded, this affects both sectors in the form of a pound for pound payback, even though the private recreational sector harvested within its landing limits.

Under Structure D, both sectors are held accountable to the other sector's discards. The

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different allocation alternatives are displayed here using both landings and catch data, and if for-hire sector separation occurs at the Sub-ACL level, which would be Structure C, the FMAT recommends using catch data to develop the allocation percentages.

During scoping we received many comments from the public about using VTR data for management. However, the FMAT did not develop allocation alternatives using VTR data thus far, because most states do not require catch reporting from for-hire vessels operating within state waters.

During the most recent Monitoring/Technical Committee meeting, we polled the different members, and we found that only a handful of states actually require 100 percent coverage in data reporting. The FMAT also recommends utilizing MRIP data for accountability at first and catch accounting.

MRIP data could be replaced by VTR for accounting, once states have implemented the proper reporting requirements. Despite the FMATs preference for using MRIP for accountability, it has concerns about the reliability of MRIP data at the mode level, mainly the high PSE values. As a reminder, the FMAT previously recommended removing sector separation from this amendment prior to the June meeting, citing these same concerns.

This graph just shows even further why it may not be a great idea to use VTR data to develop allocations. This graph displays a large disparity in MRIP estimates to VTR data, and if we use VTR data the for-hire sector would get a much smaller allocation, most likely because not all of the for-hire vessels are reporting.

When presented this information during the APs Fishery Performance Review, the AP provided some mixed feedback regarding sector separation. One advisor spoke in support of using MRIP data to develop allocations, since not all for-hire vessels submit VTRs. The AP

member in support of using VTR data said that if people do not submit VTRs they should not be part of the for-hire allocation.

That same AP member also thought that there should be a committee of for-hire members to help inform management, with setting recreational measures such as size, season, and bag limit. Another AP member spoke in opposition to for-hire sector separation, saying that the difference in bag limits for bluefish are not fair anymore. If the for-hire sector separation must happen, there needs to be a good look at what a fair allocation would be. This table presents the summary of FMAT recommendations and considerations. The FMAT is recommending that sector separation flowchart structures B and D be removed, and C be kept in for further development.

Additionally, relying on VTRs and ensuring all states implement the same requirements in a timely manner is a large undertaking, which will require significant administrative effort and stakeholder buy-in. Developing 100 percent reporting may also be necessary prior to implementing for-hire sector separation.

Moving on to Issue 7, which covers the sector transfers. The FMAT has refined the alternatives in the sector transfer process, but still has some areas that we're asking for input from the Board and Council. As is done under the current sector transfer process, the need for a transfer would be addressed annually through specifications.

Prior to the August meeting the Monitoring Committee would develop a projection of next year's catch or landings for both the recreational and commercial sectors, using considerations such as catch in prior years. Changes in management measures, such as bag limits and quotas, trends in fishery effort and changes in abundance in biomass level.

The need for a transfer would be identified through the projections process, and the table

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identifies scenarios when a transfer would or would not occur. Under the existing sector transfer process, specifications are implemented in January for the new fishing year, and NOAA Fisheries later reassesses the transfer amount in February, based on new data, mainly MRIP preliminary data for the prior year, and an adjustment notice is released in March or April.

The FMAT did not think this post-specification adjustment could be made if quota is transferred from the commercial fishery to the recreational fishery, mainly because recreational measures are set in December, based off of an RHL that is determined in August. To revisit this RHL in March of the next year, would upend this process, and really throw the recreational measure setting process into territory which would potentially be dangerous, and cause more overages.

That being said, without adjustments projections are based off of incomplete data during the prior year in August. In the case of the recreational fishery, only Wave 2 data is available by the August meeting, and this uncertainty in the projections does increase the risk of overages. The transition from old uncalibrated MRIP data to new calibrated MRIP data in recent years, does add uncertainty in analyzing past performance, relative to catch and landings limits.

It calls into question whether any analyses can actually inform the size of the transfer cap that may be needed in future years. As you may recall, the current process sets a 10.5-million-pound cap, but the FMAT settled on a 5 to 15 percent cap, looking at 5 to 15 percent of the ABC, and thought this would be a reasonable range of alternatives to present for the draft amendment. While this prevents any major one-year swings in allocation, the cap does refine that, which the FMAT thought was more appropriate than the fixed 10.5 million pounds that is currently in the FMP. The FMAT also discussed criteria for prohibiting a transfer, and

came up with a few options. Transfers could be prohibited when the stock is overfished, overfishing is occurring, or when the stock is rebuilding. The FMAT is seeking feedback from the Board and Council on the appropriateness of these criteria. Lastly, sector transfers become quite complicated if for-hire sector separation is implemented, and the FMAT discussed several options under this sector separation scenario. Option 1 is that the transfers between the sectors are prohibited.

The main idea behind this, is that any new regulatory structure involved with developing recreational sector separation would create additional complexity, in developing the transfer provision. Transfers also have the potential to increase the probability of ABC overages, especially considering the greater uncertainty in breaking down recreational data by mode.

Option 2 would be the tri-directional transfer approach, where transfers can occur between all three sectors. The big proponents for this method would be equity and flexibility. However, there are numerous reasons against using this option. This option firstly greatly complicates the specifications process with the need to address additional considerations, such as which directions transfers should occur, and how much should be allocated to each sector.

Those are decisions that would become quite contentious, and very challenging for the Monitoring Committee to analyze. The FMAT also put forward Option 3 as a potential alternative. Option 3 it seems that the recreational sector separation occurs at the Sub-ACL level, and landings are projected for the for-hire sector, private angler sector, and the commercial sector individually, in comparison to the respective landings limit.

If the transfer is from the recreational sector to the commercial sector, any projected underage is deducted from the respective sectors landings limit, and then added to the

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commercial quota. The ACL should be updated accordingly if the transfer is from the commercial sector to the recreational sector. The transfer quota is then allocated between the private angler and for-hire sectors, based on predefined allocation percentages that would be determined from this amendment.

It is also important to note here that the FMAT had concerns about utilizing MRIP data in this way. Projecting recreational landings has already proven to be a challenge through the current process, and there is not an insignificant degree of uncertainty in projecting landings by mode, when recreational measures are changing year to year, which seems to be a territory we might be moving into, now that we have a very restrictive bag limit.

The AP had some concerns about this whole process as well. One AP member said that the MRIP estimates may cause problems for transfers, due to the timing of when data is released, and the consistent delay is going to affect the recreational projections. Conversely, commercial data is a census and not an estimate, and he thought it was better suited for informing the transfer process, as it currently exists.

In summary, we are looking for Board and Council feedback on the criteria for prohibiting a transfer, in the several options for transfers discussed thus far. Any discussion on reservations about these methods or potential ways forward, would be very helpful. Issue 8, and the last issue we'll cover, covers the commercial state to state transfers. The status quo is that any state implementing a state commercial quota for bluefish, may request approval from the Regional Administrator to transfer part or all of this annual quota to one or more states. As a reminder, this idea of the Refereed Transfer Provision was offered forward by the Board and Council, to be developed further by the FMAT.

Lacking details on how this process would operate, the FMAT attempted to flesh out the process, to create a workable alternative. This alternative offers that a neutral party match up transfer partners, to ensure one or more states are not requesting too much quota or requesting transfers too early in the year.

States are to project their own landings, to determine when a transfer is needed, and once a state reaches 75 percent of their own quota, state personnel may notify the neutral party, which would most likely be the Commission's FMP coordinator for bluefish. The coordinator would also maintain a spreadsheet of landings and projections by state.

Once states submit a transfer request, the appropriate transfer amount would be determined by the neutral party. The refereed approach would be accompanied by this transfer rule, and what we've come with so far is that any transfer requested by a state is reduced by multiplying the requesting state's percent share of the coastwide projected overage.

That remaining quota is not transferred, it stays with the state as a surplus of quota, in reserve for other states to request. This may be a little bit confusing written down on paper, but we also have it listed in the FMAT summary, where we walked through step by step, and provide some tables that might make it a little bit clearer.

Then I'll also pull up a few of these tables, just to quickly demonstrate what this means. The neutral party would utilize recent trends in commercial fishing effort, to determine the projected landings for the year. For example, this table displays the average commercial landings by month, in pounds for 2017 to 2019. This would help inform when states land their quota and at what time of the year, based on recent trends.

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The neutral party would utilize the same method used annually by Council staff to project recreational landings. The column to the far right presents the projected underages in green, and the projected overages in red. Under the transfer rule, if New York requested 100,000 pounds of quota from New Jersey, New York's share of the coastwide overage is 36 percent.

As you can see here, Rhode Island also comprises a large percent of the projected overage, and they represent 64 percent. New York would only receive 36 percent of their transfer request, which equals 36,000 pounds, and 64,000 pounds are left with New Jersey, not transferred, which would help serve as a reserve quota should Rhode Island request a transfer from New Jersey. After FMAT discussion, a recommendation for removal of this alternative was made.

While the FMAT liked the idea of equitability, the proposed method may simply replicate the current process, with added restrictions and analysis requirements that will overcomplicate the current system. The FMAT was concerned that states would not be inclined to opt into a system that restricts flexibility in negotiating transfers, and provides a loss of autonomy. The refereed approach may also provide an unfair advantage to states that harvest their quota earlier in the year, allowing them to request for transfers earlier. The FMAT thought that the rule would increase the frequency of transfers as well, as you can see in the example that when a request is made, almost always it would be reduced by a certain amount, as well as the fact that each state's projections would need to be updated continuously, every time a transfer was requested.

Altogether, all these concerns create a significant burden on state personnel, and would be challenging for the neutral party to coordinate. The AP also had opportunities to comment on the state to state transfers, and two of its members were in support of the

refereed approach, and a third member was concerned that transfers can lead to localized depletion.

Another AP member emphasized that if the refereed approach is not adopted, the current method for state transfers should remain in the plan, seeing that it adds much needed flexibility and provides stability for states with reduced quotas. We also received comment from the public that also voiced support for state to state transfers, as they currently operate within the current FMP.

He explained that the tool provides a much-needed relief for states that are dealing with reduced quotas, and without a state transfer this year, Rhode Island fishermen will be forced to increase regulatory discards when they catch bluefish when targeting other species. Here is the summary of what I just went over, and as a reminder, the FMAT identified a number of concerns, and recommends removal of this refereed approach for further development.

Then to wrap up we've got all the recommendations for removal here. The FMAT found that sector allocations using the trigger approach was difficult to analyze, wasn't sure what the basis would be, and recommended removal. Pending a lack of biological basis, the FMAT recommends removal of the regional commercial allocations.

This would be determined between now and the next meeting. Then Structure B and D under recreational sector separation are recommended for removal, and then lastly of course what we just went over, the refereed transfer approach is also recommended for removal. This is the timeline we have as of today.

But of course, things may shift, depending on whether the Council and Board decide to remove for building from this amendment. As a reminder, that this decision needs to be made either at this meeting, or in December to allow

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enough time for the rebuilding plan to go into effect, due to the Magnuson-Stevens Act requirements of a two-year rebuilding plan once the overfished designation is given.

Between August, right now and December, the FMAT will further refine the draft alternative. In December 2020 we'll approve a final range of alternatives for inclusion in the draft amendment, also referred to by the Council as the public hearing document. In February of 2021, we'll approve the draft amendment for public comment, and this will keep us in line to have a formal submission of the amendment and the rebuilding plan to NOAA Fisheries by September 2021. With that, if anyone has any questions, we would be happy to take them.

CHAIRMAN BATSAVAGE: Thanks Dustin and Matt, and many thanks to the FMAT for all the work they've put in so far, for looking at these different issues and options for us to discuss. I'll go ahead and open it up for some questions right now. I think if anyone has any questions that really drill down to any of the issues that Matt and Dustin presented today, I ask that you hold off on those for when we provide some guidance to the FMAT on this document. Any questions on the presentation?

MS. TONI KERNS: You have Joe Cimino and then Dewey Hemilright.

CHAIRMAN BATSAVAGE: Okay Joe, go ahead.

MR. JOE CIMINO: Thanks to both Matt and Dustin. That was a lot of info. I do have one big question. I'll lead with, you know I support the idea of sector separations for a couple reasons, one being I want to get away from MRIP as much as possible. I thought B did that for one sector, but that could only happen, as the FMAT pointed out, when we closed the loophole and have 100 percent reporting. That is down the line now, in my opinion.

But the idea that there is no accountability at this Sub-ACL level surprises me. We're

rebuilding this stock, and Dustin's example let's flip it, because you know the private has so much more on that allocation. Let's say they go over considerably. The FMAT is suggesting that with C, at a Sub-ACL level, NOAA is going to be okay with still filtering down that entire target for, say the for-hire fleet.

There is no accountability at the ACL level. I almost don't see the difference then with having their own ACLs, if the only accountability is that a Sub-ACL has. I'm confused, and would like an explanation of how that actually differs, if the payback for accountability measures weren't at the ACL level.

MR. COLSON LEANING: Hi Joe, happy to take that one. I just switched headsets, so can you hear me?

MR. CIMINO: We can.

MR. COLSON LEANING: Just to clarify. Are you saying you're unsure of why B is not the preferable alternative, Structure B up in the top right?

MR. CIMINO: Well, I am surprised to hear that accountability would only happen at the Sub-ACL. In other words, using C there is a recreational ACL, the private mode goes way over theirs, but we still give the for-hire fleet the next year their entire allocation at a Sub-ACL level, because there is no accountability at the ACL level. That surprises me.

MR. COLSON LEANING: I see. I mean that is the big difference between how things operate right now, and how things would operate under this recreational sector separation idea. The reason, or at least one of the reasons why the for-hire sector has voiced concern time and time again about not wanting to be part of the private angler sector. Not part of the whole recreational sector, is that they are tired of the wild swings in MRIP data. The fact that participation by private anglers may vary considerably year to year, and that they don't

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want to face these accountability measures as they have in the past, which requires that management measures be reduced, or potential pound for pound payback be implemented. They don't want to be affected by that any longer.

By splitting at the Sub-ACL level, you're basically jumping down accountability one step, so it's more targeted. If the for-hire sector operates within this limit, utilizes the bag limit, the minimum size that they are afforded, and they do not exceed their landings limit, and they do not have a large amount of discards.

Then they would be unaffected by the private angler sector, which may way exceed its limits in any given year. That was why this is taken. But you're right. If it's the desire of the stakeholders, and the desire of the Board and Council that any recreational overage, regardless of sector, be applied to everyone, then sure yes. The current system we have in place would be the way to go.

CHAIRMAN BATSAVAGE: Do you have a follow up on that Joe, or is that good?

MR. CIMINO: No, I think that's good. I mean GARFOs here. If they're confirming that that can happen at the Sub-ACL level, then that answers my question. Thank you.

CHAIRMAN BATSAVAGE: Next up is Dewey Hemilright.

MR. DEWEY HEMILRIGHT: I've got a few questions, one of them might be for Dustin. On his last comment about bluefish bycatch, I was curious as what species or what fisheries would Rhode Island be targeting fish that they will have bluefish bycatch, and what gear would they be using if that is the case? That is one question, and I'll wait for the second question.

MR. COLSON LEANING: Dean Pesante from Rhode Island was actually the person who spoke to me, a really nice guy. We had a few

conversations. I don't actually know; he didn't get into the gear type that he was using. But he did mention off hand that fishing for scup he occasionally gets bluefish bycatch. He named like one or two other species, and I'm forgetting at this moment, but I think scup was mentioned.

MR. HEMILRIGHT: You don't know what gear type he uses, is that correct? For Rhode Island, what is the appropriate gear that harvests the amount of bluefish?

MS. KERNS: Why don't we let, Jason has his hand up, Joe. He might be able to answer.

CHAIRMAN BATSAVAGE: Yes, let's go to Jason McNamee of someone from Rhode Island will probably be able to better answer that question. Jay.

DR. JASON McNAMEE: We are talking about a gillnet, in the case of Dean. I do have some comments I want to make, but you can call on me whenever you're ready.

CHAIRMAN BATSAVAGE: Yes, thanks. Dewey has another question, and we'll go to that right now.

MR. COLSON LEANING: Just to add, Dean's comment letter on this action is part of the briefing materials there as well, if people want more information. Thank you.

MR. HEMILRIGHT: I read his comment letter, but it didn't drill down to specifics, it was kind of an overall thing, and I was just curious. You know a scup is a lot smaller fish sometimes than a bluefish, and I was just curious what the gear would be used. Also, my next question would be for Issue 3. I think the last slide, and this is for Matt.

Given that you have the averages of some of the fisheries of the species caught bluefish in the different months. Have you done any analysis, particularly I know for North Carolina

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we have an offshore fishery in federal waters, and we've got an inshore fishery? I was just curious. I think we did the average as a pound for each month the last three years. I think it's the last slide, maybe, I'm not sure for Issue 3.

But have you done anything to look at, I don't think it gave a clear picture? You know some states have offshore fisheries, and some are inshore that might want to give a different picture, as far as the different scenarios that we're looking at here for things. I was just curious, has any of that been looked at, and when you gave the average of caught each month, is it by state landings or is it by VTR landings, state reported landings, state fisheries, or VTR landings?

MR. SEELEY: Thanks for your question, Dewey. I need a little bit of clarification. Are you referring to the minimum default allocation, the slide on the screen?

MR. HEMILRIGHT: No, I'm referring to the part where the table, and it might have not been Issue 3. The table that showed the average weight landed each month for bluefish, an average for three years, I think '17, '18, and '19 is the graph I was looking at.

MR. SEELEY: I'm trying to recall.

MR. HEMILRIGHT: Yes, that right there. The average there, and is this from VTRs or is it from state reported landings? I'm trying to get an idea what part is federal waters and what part state waters, and I don't know what I'm looking at.

MR. SEELEY: Okay, I understand. Yes, this is Issue 8, related to the commercial state to state transfers. This I believe, and Dustin, please correct me if I'm wrong, is from the ACCSP commercial database. These are predominantly state landings through the dealer database that ACCSP works through. You know based off the monthly, this is how things have been set up.

MR. HEMILRIGHT: What I'm after, trying to get to. Where in this document can I find the difference of VTR reported federal landings by the vessels, and then you've got the state landings, which are separate, and then sometimes you don't have to have a bluefish permit, is what I'm asking for, because I'm not seeing that separation. It's important, because we've got two different fisheries in some states, to give a clear picture. I was wondering if that could be possible in the future, to break this down by, you know how much being caught in federal waters, and then what is the amount in state waters.

MR. SEELEY: Right, okay I understand, Dewey. Yes, I don't think we have anything in this presentation that really hones in on that. However, in the specification's presentation, you may recall there is a figure in there that shows the exact percentage of landings in state vs. federal waters in a given year, and I believe that it's more than 90 percent of the landings are coming from state waters. I can pull up that information and get it over to you at some point. However, it's not in this presentation.

MR. HEMILRIGHT: If we're really drilling down with these different method things, some states are affected. I mean everybody is getting affected by the bluefish, these sub packs commercially big time. But what I'm saying is, in certain states 90 percent of our bluefish don't come from state waters in North Carolina.

MR. SEELEY: Right.

MR. HEMILRIGHT: I'm just trying to paint that picture to give a total things of the different scenarios here of just what's for trade here? But thank you, and we can talk more offline.

MR. SEELEY: All right, thanks for your question, Dewey. I understand the discrepancies there, that some of the VTRs are not captured in the commercial database, and add that ACCSP uses. We've worked pretty closely with them to ensure that the commercial landings that we

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are seeing, encompass you know the full universe of those landings. But yes, I would be interested to talking a little more offline about that as well, so thank you.

MR. HEMILRIGHT: One last thing. When you looked at this issue here, and you talk about 90 percent of the landings, according to what you looked at came from state waters. Well, in North Carolina in January and February, I promise you that 90 percent of those two gears there in those two months didn't come from state water landings. Just to show you how it's kind of skewed a little bit of the average here, looking at the particular year and where they came from. It's just to paint a clearer picture is what I'm looking for.

MR. SEELEY: I understand, thanks, Dewey.

CHAIRMAN BATSAVAGE: Before we go to other questions, I just want to circle back to Jay McNamee, to see if his comments were about Dewey's questions of the Rhode Island fishery, or are they just comments in general. If they're comments in general on these issues, we'll just hold those for now to when we get into that part. Jay.

DR. McNAMEE: They are kind of related to what we were just discussing, but they are separate and apart, so you can kind of keep the queue in order.

CHAIRMAN BATSAVAGE: Great. Any other questions on the presentation?

MS. KERNS: Jay did have his hand up as next in line for questions, and then there was Adam Nowalsky, and then there are some members of the public that have questions. I don't know if you are going to take those or not.

CHAIRMAN BATSAVAGE: Let's see how this goes, in terms of time. Adam, you're up.

MR. NOWALSKY: With regards to the recreational sector separation. You touched on

a lot of issues that have come up, and this was the purpose. This was the interest in having this item in the development process so far by the Board and the Council. Clearly, you're aware of the recreational issues, clearly there have been some members of the for-hire sector that have been pushing for this, and we certainly unearthed a lot of issues here.

We're now at the point where we're saying, if I heard you correctly that we would continue to hold the for-hire sector accountable to MRIP with everything right now, because of lack of complete VTR reporting. We have concerns about development of other options in this document, including transfers.

I guess what I'm wondering at this point is, if we leave it in at this point, what kind of development would we actually expect on this option in the coming months, given the complexities you've raised so far, and has there been any discussion by the FMAT? I know this Board has not been as included on the concept of recreational reform, as the Summer Flounder, Scup, and Black Sea Bass Board, but certainly the Council is aware.

Given the need to move this forward, with regards to the rebuilding timeline, could the FMAT have any discussion so far about the possibility that this could be moved somewhere else, recreational sector separation, like recreational reform, which hasn't been completely launched off the ground. We're hoping to accomplish that this afternoon. I believe, Mr. Chairman, you're going to make an announcement to the Bluefish Board that they are invited to listen in, and potentially participate, since it may include them.

Those would be the questions. Given all the issues that have been raised, what would we expect with development if we leave Option C in, and has there been any discussion about possibly moving it to a different venue that would give us the time to do the things you said you would need time to do, including looking at

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completing all of the state by state VTR reporting, so we get a complete picture that way.

MR. COLSON LEANING: Thanks Adam, I'll take on this one. Yes, you've identified the fact that recreational sector separation does complicate a number of other issues in this amendment. If we were to leave it in using Structure C as the preferred approach, we would come back to the Board and Council with different allocation alternatives that we've already identified, I'm going to bring them up here on the screen.

Essentially, we would be using the FMAT recommendation, and really the only way that the FMAT could move forward is developing alternatives that would be using MRIP data to develop allocations, and at first accountability using MRIP data. That would be the next step forward, and really all we have is an alternative here, given the rebuilding plan timeline. If the Board and Council is concerned about moving forward with this approach, want more time for recreational sector separation to be developed, considered. The FMAT has not discussed it, since at their last meeting, in terms of moving it to recreational reform. But I do recall from our FMAT meeting back in, I want to say it was April. The initial reaction to recreational sector separation as an option, was that it should be a more than one species consideration.

The original FMAT thought was that maybe this should be handled on a multispecies basis. I could see support from the FMAT removing this from the amendment as is, and putting it into recreational reform, but at this time I would also need to consult, and make sure we build consensus from the FMAT. Maybe Cynthia and Matt might be able to chime in as well, since they are also on the FMAT.

MR. SEELEY: Yes, just to add. This is Matt. Dustin kind of hit the nail on the head there, the way that things have been developed. I think honing in on the specific flowchart that the FMAT would like to recommend here, which

was Option C as you indicated, Adam. That will really allow the FMAT to continue to develop the provisions that would be set up within the for-hire sector separation.

We would be able to focus on transfers as we move forward, since we know what the flowchart would actually be, how things would be allocated. It would give us a little bit more leeway and flexibility, to kind of explore a little bit more widely surrounding this issue, instead of having a variety of different flowcharts that we're trying to, you know hone in on and develop these provisions for four different options instead of just one.

There is definitely more work that can be done here that the FMAT would look into after this meeting, once we receive direction from the Council and Board. But Dustin was absolutely correct, back at the April FMAT meeting the FMAT did recommend removal from this action, and potential inclusion with other species, to you know make it more of a multispecies comprehensive action. So yes.

CHAIRMAN BATSAVAGE: Yes, we'll definitely circle back to this as Matt and Dustin go through these issues to get specific feedback from the Board and Council. That is a good question. I think it's something for all of us to think about. Any other questions from either the Board or Council? If not, I may just go to the public really quickly for any questions they might have.

MS. KERNS: You have Jason McNamee and Tom Fote.

CHAIRMAN BATSAVAGE: We'll go ahead and take Jason and Tom, go to the public, and then I would like to then get into the discussion of providing feedback to the FMAT on these issues. Jay, you're up.

DR. McNAMEE: My question is back on the state to state quota transfers. You had a table up earlier that I think might be helpful to pop

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back up, it was that average by month. Yes, that one. I do have a question, I promise. What I'm trying to get at is the FMAT has suggested this notion of a refereed approach is kind of like what we have now, but worse. That is actually what I want to drill into a little bit. But I thought just to be very specific about why I've been a proponent of trying to do a better job with this system. As you saw earlier in the presentation, it's actually the next table down you see that. Rhode Island and New York are kind of some of the bigger movers of quota along the coast. If you flip back to the last table you also see that the New York fishery tends to be more in the spring, the Rhode Island fishery tends to be more in the fall.

It kind of sets up this weird dynamic, where you know New York will have issues earlier in the year, and will be, you know kind of out, going to different states, seeing if they can get quota transfers earlier, and then Rhode Island wouldn't do that until later. Rhode Island is incentivized to go out and ask for transfers before we actually need them.

My whole point of kind of playing this idea up was to try and get away from, or develop a system that is a little bit, like we don't want to compete with New York, and kind of rush out and ask for things that we might now need, you know at the time. I guess now to my question, Dustin, it sounds like the things that shook out of this idea were sticking with what we have now.

For all intents and purposes, it's been working okay, even this year, even though New York got out before we did, we were still able to get some transfers, which I'm really appreciative of. But the only other option that we still have available is this refereed approach. If you could clarify a little bit more why the FMAT thought, you know what makes that worse? You know I sort of have described the issue that we face in Rhode Island. Could you help me understand why the refereed approach really doesn't help that?

MR. COLSON LEANING: I'll try. It was difficult. I think the most challenging part of developing this alternative is understanding how a neutral party would decide who can and who cannot receive quota from a state that is willing to transfer. Lacking any sort of you know arbitrary decisions as the way to move forward, you have to do some sort of mathematical calculation. The only way that we thought that this could be done from an objective standpoint, is by projecting catch as we have done here in the table.

Finding out who's projected to exceed their quota, based on prior years of landings, which would capture Rhode Island's trend, given that they harvest later in the year. Then reducing any transfer request from one state to another by their share of that overage, and then basically that reduction allows for a buffer of surplus quota to be accessed later by another state. However, the FMAT identified there are a few ways of kind of gaming the system.

One way being you just request quota several times, or you request more than you need, all of which increases the amount of communication that needs to go back and forth, and it kind of increases the workload of both state personnel and the neutral party, without altogether too much benefit in the end.

Perhaps the reason this refereed approach didn't go far enough forward or to everyone's liking is we just didn't have our brilliant "ah ha" moment, where we were able to find a rule that satisfied the requirement of making it fair and equitable. Lacking a great idea yet from the FMAT, from myself or from the Board on how exactly that would operate, this is kind of what we ended up with, and the FMAT thought it would just increase paperwork, increase communication, and may not actually end up with that much better of a result. I hope that helped. I would be happy to take any follow up.

CHAIRMAN BATSAVAGE: Thanks for that explanation, Dustin. Yes, just from my

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perspective since we receive a lot of calls for quota transfers for a variety of species, one thing we've done in North Carolina, in the case of menhaden, for example, is we anticipate that multiple states will contact us during the year.

We try to ration out our quota transfers to the different states, knowing that we'll probably get contacted multiple times. Other times we, in the case of spiny dogfish, since we're really not sure what our landings will be in any given year, we will, instead of doing one big transfer to a state, we'll do multiple smaller transfers, to ensure that that state can have their fishery remain open, but also not result in us closing early because we've transferred too much quota.

I guess every state deals with it differently, and I guess when we get to this issue, a question that I would have, not now, but when we talk about it, is how is the state to state transfer issue for bluefish different than other species that we have that we do quota transfers for? All right, next up is Tom Fote.

MR. THOMAS P. FOTE: I put my hand down.

CHAIRMAN BATSAVAGE: You did, okay yes sorry, I can't see the hand raise function there, my apologies. Toni, how many members of the public would like to ask a question?

MS. KERNS: Really quickly, Dewey do you still need to have your hand up?

MR. HEMILRIGHT: Yes.

MS. KERNS: You have both Maureen Davidson and Dewey Hemilright as Council and Commission members that have questions, and then you have three members of the public that have questions.

CHAIRMAN BATSAVAGE: Okay, I'll stay with the Council and the Board. Maureen Davidson.

MS. MAUREEN DAVIDSON: I wanted to speak in response to Jason about transfers going to both New York and Rhode Island. Right now, we're not comfortable with the refereed approach to transfers. So far bluefish transfers have definitely worked for the benefit of New York state fishermen.

We do like the ability to sort of talk to another state directly, and talk about how much fish is available, is this a good time to ask, and sort of work cooperatively with our neighboring states. I would like to say that we don't want to be competitive with Rhode Island for transfers. I do realize that we do tend to get our fish earlier in the year than Rhode Island. But now that it has sort of been brought to the forefront of my mind, when I have to think about transfers. I think I would rather talk with Rhode Island to see if we could work cooperatively, to make sure that we can get the transfers that we need when we need them, and sort of not letting New York sweep the market before Rhode Island can get their fish. That is just something that I think we could do, before we would consider perhaps going to a refereed transfer system. All right, thank you.

CHAIRMAN BATSAVAGE: Yes, I think we're definitely going into questions and comments on the issues that provide feedback. I'm going to hold off on any more for that. But I just want to give the public a quick opportunity if they have any questions on the presentation. Just keep it to the questions right now. Again, being very mindful of the time we have here. I want to make sure that we give the FMAT the feedback that we need. Toni, who from the public do we have that would like to ask a question at this point?

MS. KERNS: Greg DiDomenico, Jim Fletcher, and Mike Waine.

CHAIRMAN BATSAVAGE: Okay Greg, you're up. Thanks.

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MR. GREG DiDOMENICO: This question is for Matt and Dustin. You guys realize how curious I have been regarding the issue of catch-based approach versus landings-based approach. Can you guys explain to me what measurable results there would be, and/or biological results or management results related to choosing catch-based versus landings-based. Then my second question is, regardless of which one you choose, is it possible to keep the commercial fishery managed by landings, and choose what you guys want for the other groups?

MR. SEELEY: I can tackle this one, give it a try. Thanks for those questions, Greg. I'm going to try to address your second question first, if it's possible to do commercial allocations with landings data, and then recreational allocations with catch data. My first thought there would be that that is not able to happen, since we're using the full population of landings, or catch, whatever data that is.

When you're allocating you need the same overall sum, to try to get the complete allocation percentages. That would be my first instinct there is that that is not able to happen. However, it's something that we could discuss with the FMAT to see if there is any different perspective along there. In regards to your first question, what sort of results we would be expecting. I think I would need a little bit of clarification from you on exactly what you mean. However, you know in terms of the reason that we're discussing the catch-based allocation.

You know we've discussed this back and forth quite a bit. But the main reason for the catch data being proposed, and continued to be available here as an option, is due to the vast number of scoping comments that we're getting, you know talking about recreational anglers being interested in the catch and release aspect of bluefish. The FMAT does understand that this fishery is not catch and release for everybody.

Obviously, there is a commercial aspect, and there is a recreational aspect of people that like to take home some fish. But trying to account for the vast number of comments that we did get surrounding the catch and release aspect. That is why this catch data has been continued to be presented throughout this amendment development. I'm not positive if that answered your question related to the results, so if not, if you could kind of either reword or clarify what you meant, I would appreciate it.

MR. DiDOMENICO: Sure, Matt. I understand the genesis of this entire issue. You and I know that I've been asking you these questions since this amendment started, and one of your responses is what made me curious, and the response was recognition of recreational discards. That is all fine and good. They're asking for a different form of management to accommodate their fisheries.

In accommodating their fisheries, will it make it easier on you to manage their landings? Will it decrease uncertainty? Will it contribute to the rebuilding of the species during the time we're in rebuilding? Of course, that begs the question. If you have high certainty on commercial landings, we know that the discards have been debated, and we know that they are small.

That is why I'm begging the question that you should consider, first the reasons why you're doing it, and articulate them from a biological standpoint, or as it relates to the uncertainty of recreational landings. Then of course, the second point being you have to give a pretty good reason what you can continue to manage the commercial sector on landings.

MR. SEELEY: Thanks for the clarification.

CHAIRMAN BATSAVAGE: Next up is James Fletcher. James, do you have a question?

MR. JAMES FLETCHER: The question is, does the President's Executive Order change the way

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that the ASMFC and Council were doing business, because at the present time, 13.1 million recreational fishermen in saltwater are getting in excess of 80 percent of the boat. Now, it seems to me that the 300 million people in this country that need fish should be able to get them.

My question to you is, does the Executive Order change the way that we have been doing business, and does the Council and ASMFC look at the allocation as a different matter, given 13.1 million people, 60 to 80 percent of the fish, so I would like an answer. Thank you.

CHAIRMAN BATSAVAGE: Thanks, James. I don't think I have an answer, unless someone else in the Council does. I know this will be discussed; the Executive Order will be discussed at next week's Mid-Atlantic Council meeting. I guess we can just kind of address that there, unless somebody had an immediate answer for Mr. Fletcher. Hearing none, the next question I'll get to, or person that asked the question is Mike Wayne. Mike.

MR. MIKE WAINE: My question is about MRIP data, and we all know some of the challenges associated with an uncertainty using the MRIP data at the sector level. I'm just wondering what FMAT said about using MRIP data at the mode level that tied to the allocations for sector separation. Has the Service weighed in on that at all?

MR. SEELEY: This is Matt, I can try to tackle that one. Thanks for the question, Mike. Obviously, there are concerns with the MRIP data. As we indicated, you know the MRIP data has very different numbers of fish landings compared to the VTR data. We're all pretty familiar that the further that you break down the MRIP data, you know by state, by mode, the higher that the PSEs can get. The FMAT has taken this into consideration, and trying to account for it as best they can. However, as Dustin indicated during the presentation, not all states require

VTRs to the degree that would be necessary to monitor for-hire sector separation.

At this point MRIP is what we have, and what we're working with, and the FMAT is continuing to discuss the best ways to work through for-hire sector separation. But breaking down the data at the mode level creates these higher PSEs, which is definitely an area of concern. I think the FMAT captured it fairly well in the discussion document as well.

CHAIRMAN BATSAVAGE: Does that answer your question, Mike, or do you have a follow up?

MR. WAINE: Yes, I was just curious if the Agency has weighed in on the use of MRIP data at the mode level for these sector separation discussions.

MR. SEELEY: Yes, so we do have GARFO representation on the FMAT. I would think that the FMAT recommendations include the approval by all FMAT members, if there is someone that doesn't confirm exact agreement with something that is being stated in the FMAT that would be clearly articulated in the document. I think the way that things were laid out in the document has GARFOs recognition within it, and if I'm kind of overstepping there, I would turn to GARFO just for any additional comments.

**PROVIDE GUIDANCE TO THE FMAT ON THE
BLUEFISH ALLOCATION AND
REBUILDING DRAFT AMENDMENT**

CHAIRMAN BATSAVAGE: We'll go ahead and move on to the fifth item on the agenda, which is to Provide Guidance to the FMAT on the Bluefish Allocation and Rebuilding Draft Amendment. Before we do, Matt and Dustin, are you going to kind of go through, I guess a similar format that you did with our last meeting, where you go issue by issue, and the Board and Council provide feedback on each of those?

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MR. COLSON LEANING: Yes, I'll bring up those summary tables now that provide kind of questions. If we do move into motion territory, I will turn it over to Maya to take control of the presentation. Just so you know, Maya, all we're doing is covering these tables here one by one. Maybe once we get into more Board and Council discussion at the very end, maybe I'll turn it over to you.

CHAIRMAN BATSAVAGE: Yes, we'll go ahead and open up to the Board and Council on any feedback on these issues. As I said, we'll just go issue by issue. I think the Board and Council at this point, we all need to think about any options, approaches, et cetera that should be removed from the Amendment, and the FMAT has made some recommendations for that.

This would allow the FMAT time to focus on the items that the Board and Council think are the most important, and would also keep this Amendment on schedule. Anyways, open it up for questions and comments by the Board and Council. Toni, who do we have in the queue?

MS. KERNS: Right now, I don't have anyone. Tony DiLernia. Dustin, you're on Issue 2. I don't know if you're planning on starting with 2 or 1.

MR. COLSON LEANING: One was not discussed, that's FMP goals and objectives, so we'll be starting with two today. But thanks.

MS. KERNS: You're only showing partial screen, not the full screen slide.

MR. COLSON LEANING: I'm not in presentation mode, so that I can flip through more easily. Is that what you're referring to?

MS. KERNS: It's fine.

CHAIRMAN BATSAVAGE: Okay, Tony DiLernia.

MR. TONY DiLERNIA: It's my understanding you're asking for a recommendation as to what to do regarding this issue, and I agree with the

FMAT. Remove the trigger, and I would recommend that we stay with the phased-in approach. That's all, thank you.

CHAIRMAN BATSAVAGE: Any other comments and feedback on Issue 2, Sector Allocations?

MS. KERNS: I don't see any additional hands.

CHAIRMAN BATSAVAGE: Okay, is there any objection to the feedback on removing the trigger option from Sector Allocations?

MS. KERNS: I don't see any hands, and if somebody thinks they have their hand up, they do not currently.

CHAIRMAN BATSAVAGE: Great. That was easy. Let's move on to Issue 3, please.

MR. COLSON LEANING: Chris, here we have a just basically update of FMAT progress. At this point there is no recommendations for removal, so perhaps we can move through this quickly. But perhaps if any Board or Council members have any concerns with how this has been shaking out thus far, in regards to the phase-in trigger or minimum default allocations, any comment there would be helpful.

CHAIRMAN BATSAVAGE: I did have a question on the trigger options. I think in the presentation you showed the trigger being the average commercial quota over a certain time period, I think that match up with the options in the amendment. Were those the commercial quotas that were in place after the transfer from the recreational fishery?

MR. SEELEY: Yes, so those should be the final commercial quotas at the end of the year, so yes.

CHAIRMAN BATSAVAGE: I guess, did the FMAT discuss the possibility that with the low ACLs while we're rebuilding that transfers may not happen at all, or they won't happen to that magnitude, and maybe looking at, I guess a

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different trigger threshold that maybe I guess matches the base commercial allocation before the transfers that they received in the past.

MR. SEELEY: Yes, I think that was discussed a little bit, not to any crazy extent. You know staff proposed the 20-year, 10-year, and 5-year average commercial quotas as a trigger point, because you now right now we're in rebuilding, so when you encompass that longer timeline, where the quotas were larger. Obviously, that is going to inflate these trigger points, or these trigger thresholds. I believe that the FMAT was concerned about, you know hitting a trigger during the rebuilding plan.

You know just trying to make sure things are consistent and stable. That was a point of concern. However, I think the FMAT would be happy to discuss different levels or thresholds for that trigger, whether we could consider a moving average or a different time series. Any sort of information or direction that you could provide, in terms of some other approach that you would like to see, would definitely be appreciated.

CHAIRMAN BATSAVAGE: As we go through these issues, if any other members of the Board and Council have any thoughts on that. That was a good answer, gave me some things I didn't think about. Toni, who do we have in the queue for providing feedback on this issue?

MS. KERNS: Nichola Meserve.

CHAIRMAN BATSAVAGE: Okay, Nichola.

MS. NICHOLA MESERVE: I agree with, I think what you just read there is to have the FMAT look at different trigger levels. I was struck by the fact that the lowest trigger level considered right now is 6.67 million pounds, and right now we have a commercial quota of 2.77, I believe it is million pounds.

I think I liked your idea of having FMAT look at the commercial quota history prior to the

transfer to the recreational fishery, to possibly get a trigger that would be lower than 6.67 million pounds. I wasn't clear if the FMAT is recommending removal of the trigger approach that would evenly distribute the surplus to all states, except for those that are very minimal. I have a follow up as well, okay.

MR. SEELEY: I do believe in the document there was no formal recommendation from the FMAT to do away with what I would call Option 1, 2, and 3. Dustin, if you can go to Slide 11. Nichola, just to provide that background again for everyone. Once the trigger level is hit the FMAT discussed the three options of the different trigger percentages that could be allocated.

You can see that is a 0.05, 0.1, and 0.25 for states that have less than 1 percent baseline allocation, and then the remaining allocation is divided evenly amongst those states. The FMAT didn't think that this was the best approach. I don't recall them specifically recommending removal. But the reason that they didn't think it was the best approach was, because for example, we set this threshold of 1 percent, and if you look for example at Connecticut. Connecticut has a baseline allocation of 1.27 percent, and North Carolina, for example has a baseline allocation of 32.03 percent. There is a vast discrepancy between that baseline allocation that would result in the same additional allocation, after the trigger has been hit. The FMAT discussed that that may not be as appropriate as what we see here on slide 13, which was the Option 4 that was proposed. That is why the FMAT decided to add this range of baseline quotas, and have a couple different levels of how additional quota can be set up.

You see the 0.25 percent, and then you have 3 percent for the range of 1 to 5 percent, and then once you get beyond a 5 percent baseline quota, the additional quotas went easily amongst the remaining states. The FMAT did feel that this was the best option provided, and I think would be happy to explore additional

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options. Long story short, to answer your question. There was no specific recommendation to remove Options 1 through 3, but Option 4 is definitely the preferred by the FMAT that they are willing to continue to look at other options that would be similar.

CHAIRMAN BATSAVAGE: Follow up, Nichola?

MS. MESERVE: Yes, thank you, Mr. Chairman. I agree with the FMAT that the equal distribution options 1 through 3 are problematic, and I would support their being removed, and this Option 4 continuing to be developed. I would also suggest another option that would have the surplus distributed, based on a different timeframe, like is being considered in the other options looking at either the 5 or the 10-year average of landings, to determine where the surplus is distributed.

CHAIRMAN BATSAVAGE: Any other feedback on Issue 3? Toni, is anyone in the queue?

MS. KERNS: I do not see any other hands raised.

CHAIRMAN BATSAVAGE: Okay, any objection.

MS. KERNS: Hold on. Sorry, Mike Luisi's hand just went up.

CHAIRMAN BATSAVAGE: All right, Mike Luisi.

MR. LUISI: Based on the comments that Matt made a minute ago regarding the equal distribution and the vast difference between a state like Connecticut, and a state like North Carolina, given their baseline allocation. I wonder if under this alternative, if it would make sense to perhaps add another range of baseline quota, perhaps looking at states that have maybe more than 10 percent, and just adding one additional consideration.

You know, when Matt was discussing the difference between Connecticut and North Carolina at 1.2 versus 32 percent, but if you

look at a state like New York and North Carolina, North Carolina still has three times as much baseline allocation as New York, yet they're getting treated equally, and I just wonder if it's something that the Board and the Council would support, perhaps just adding another range there. Maybe over 10, so you have 0 to 1, 1 to 5, 5 to 10, and then over 10. Just something that came to mind as this discussion has been going on.

CHAIRMAN BATSAVAGE: Any thoughts from the Board and Council on the FMAT looking at that option, in addition to the one here on the screen, and the one that Nichola suggested? Okay, if not I think those would be good ones for the FMAT to continue developing. Any objections to the FMAT not moving forward with the options that provide an equal distribution to all the states?

MS. KERNS: Maureen Davidson has her hand up. I don't know if it was to object or for a comment.

CHAIRMAN BATSAVAGE: Okay, Maureen.

MS. DAVIDSON: No, I just wanted to comment on what Mike had said, because there are other states that would be in the same category as New York, such as New Jersey, Virginia, Rhode Island and Massachusetts, and so perhaps Mike's point might be something that would be good for the FMAT to consider.

CHAIRMAN BATSAVAGE: Okay thanks, yes, I think it kind of rounds out the options. Before we leave this issue, one that is up on the screen here is the minimum default allocations. I would like to get some feedback from the Board and Council on which range of percentages is minimum default allocations the FMAT should continue to develop?

MS. KERNS: So far, no hands up.

MR. SEELEY: I can just add a little context here for you. In terms of the minimum default

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allocations, the FMAT did feel that the range provided was a sufficient range of percentages. However, as detailed in the discussion document, they did confirm that 1 percent is way too high, which obviously if we're thinking about *de minimis*, you know 1 percent is much, much higher than what that would actually be. We're trying to model that off of, you know the *de minimis* aspect, and then developing that sufficiently and moving forward, so 1 percent definitely too high, but happy with the range that we do have.

CHAIRMAN BATSAVAGE: Yes, thanks Matt. I noticed that in the tables that 1 percent could result in quota being allocated to states that really don't have a directed fishery or a fishery at all, and just further complicates quota monitoring for the other states, and maybe add more quota transfer requests. Any thought from Board and Council on not pursuing the 1 percent minimum default allocation option, or any of the other options listed there in the table?

MS. KERNS: Nichola Meserve.

CHAIRMAN BATSAVAGE: Okay, Nichola.

MS. MESERVE: Yes, I would be comfortable removing the 1 percent allocation. When I had suggested the minimum default allocations, I was certainly thinking more in line with a 0.1 percent, which was similar to what those very minimal quota states have currently. I think 0.5 percent is a sufficient maximum to be considered in the range of alternatives.

CHAIRMAN BATSAVAGE: Any other Board of Council members with comments or thoughts on amendment default allocations or anything else for issues there?

MS. KERNS: I see no hands, Chris.

CHAIRMAN BATSAVAGE: We'll move on to Issue 4, regional commercial allocations, so any

feedback from the Board and Council on this option?

MS. KERNS: Tony DiLernia.

CHAIRMAN BATSAVAGE: Okay, Tony.

MR. DiLERNIA: I would like to see this remain in place. You know I'm a very strong proponent of regional management. I would like to see this remain in place for further development.

CHAIRMAN BATSAVAGE: Any other comments or feedback from the Board and Council on regional commercial allocations?

MS. KERNS: Tom Fote.

CHAIRMAN BATSAVAGE: Go ahead, Tom.

MR. FOTE: Unlike Tony, I have not been a supporter of regional allocation, because a lot of times New Jersey has tried to be forced into putting into regions that it didn't want to be in. I have a problem with that.

CHAIRMAN BATSAVAGE: Anyone else?

MS. KERNS: I do not see any other names.

CHAIRMAN BATSAVAGE: I guess there are two different thoughts on this one. Are there any objections by Board or Council members on the FMAT continuing to develop this option? Not asking if you support it or not, but for just the FMAT to continue developing this option for the amendment?

MS. KERNS: I do not see any hands raised at this time.

CHAIRMAN BATSAVAGE: I guess that will continue to be developed by the FMAT, and for further development. On to the next issue, unless Matt and Dustin, you're looking for more feedback from the Board and Council on Issue 4.

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MR. SEELEY: I think that's it for Issue 4, you know kind of like the summary says, the FMAT already intends on looking to see if there is any biological backing to the regional allocations, and if not would recommend removal at the next meeting.

CHAIRMAN BATSAVAGE: Yes, and as there were some additional analysis suggested by the FMAT, such as looking at the contribution of landings by the small number of trips landing high amounts of bluefish. I look forward to seeing more development on that. I guess with that we'll move on to the next issue for feedback. Yes, for-hire sector separation. Any feedback, comments on this?

MS. KERNS: Adam Nowalsky, Doug Haymans, and that is all for now.

CHAIRMAN BATSAVAGE: Thanks, Adam.

MR. NOWALSKY: Since our last decision to leave this in for further development, I think the FMAT has done a great job of continuing to look at this issue. They've offered us some different scenarios, recommended which ones would definitely be a no go, and one of those elements of a no-go would be Option B, which would be at the ACL level.

Now that we're talking about taking this and splitting it pretty much entirely at the recreation level, I think this has almost become a recreational issue, as opposed to a recreational/commercial issue. Given the number of issues that have been highlighted already, including the fact that we are now proposing holding, if we do these allocations we're going to hold the for-hire accountable to the MRIP numbers, at least in the short term, which has really been the cause of most of our problems we've had all along.

We've highlighted the need to find a way to get all for-hire operators reporting via VTRs. The suggestion that for-hire operators be excluded from an allocation if they have not been

submitting VTRs, I don't think is reasonable, assuming they've not been submitting VTRs because they've not been required to.

To go ahead and punish someone to adhere to a regulation that they didn't have to adhere to, I think that is unreasonable. The concerns about further development of other options, and most importantly, since we last had this discussion, we're now on the cusp of having another venue with recreational reform, where we continue to develop this option.

I am in favor of moving it there. I have spoken to a number of other Board and Council members, not everyone. I don't know if there is enough support to do this by consensus, or if I need to make a motion on behalf of the Board and the Council, which I'm prepared to do. But specifically, that would be to move further development of for-hire sector separation specifically, looking at further development of Option C.

Moving that to recreational reform, including looking at full implementation of VTRs, including those vessels that only operate in state waters. Mr. Chairman, if you would like me to go ahead with a formal motion, or if you would like to query the group about whether or not it could be done by consent, and then come back to me if a motion is needed.

CHAIRMAN BATSAVAGE: Yes, we'll look for a little more Board and Council feedback, and if there are different opinions, I'll definitely come back to you for a motion. Next up is Doug Haymans.

MR. DOUG HAYMANS: I think it's apparent where I stand on sector separation of the recreational fishery. I echo all of Adam's statements, with the exception of I would rather see it removed completely. Sector separation is a much larger issue than just bluefish. It does go across all species. The South Atlantic wrestled with it for over two years, for just a snapper group species. I would

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rather see it removed from this, and I would support Adam in that motion, if he makes that motion.

CHAIRMAN BATSAVAGE: Any other thoughts on this idea of removing the for-hire sector separation issue from this amendment, and to address it more comprehensively in a recreational reform action?

MS. KERNS: You have Jason McNamee, Dewey Hemilright, Tom Fote, Mike Luisi, Nichola Meserve, and Justin Davis.

CHAIRMAN BATSAVAGE: Start off with Jason McNamee.

DR. McNAMEE: I'll answer the question that you asked. I did have another comment on the more specific question in front of us here. But I'll maybe start answering the question you just asked, and sorry, I was kind of processing what Adam said. I do agree that it needs to be addressed more comprehensively. I will say that I am nervous to remove it from here, because of a comment I think it was Dewey made, and that I don't want it to go away altogether.

Having it kind of live at a couple different levels I understand creates work, but it gives me some comfort that it just won't disappear. If I could be given some comfort that it will actually move to a more comprehensive, higher level. We will get a change to make the case for it, and think it through, get some public comment on it. I think I could support that. But I need to know exactly where it's going, exactly what we're talking about before I would be comfortable with that.

CHAIRMAN BATSAVAGE: I guess you had some other comments on this issue in general too, right?

MR. McNAMEE: Yes, thanks. Maybe just really quick. I would be fine with moving, so if this ends on staying in. I would be fine with removing Option B. I'm not as keen about

removing Option D at this point, and in large part that has to do with, I'm having a little difficulty understanding the FMAT comments on that and the nuance between D and C. For the time being I would prefer leaving D in, but would be okay removing E.

CHAIRMAN BATSAVAGE: Appreciate that. Dewey Hemilright.

MR. HEMILRIGHT: I had my hand up, it went down. But I agree with Jason about where this is going. The South Atlantic Council looked at some of these things for the snapper grouper species, and chose not this route. But different regions and different species and most of fishing are different. I would be interested in how this is going to play out, because I have a bunch of questions with it. I would like for us to see how it is going to play out, whether it's in another amendment or something different, and just how it's going to work.

CHAIRMAN BATSAVAGE: Tom Fote.

MR. FOTE: I think this is more of a comprehensive thing we should look at with other species. I don't want a hodgepodge of rules, one for bluefish, one for summer flounder, one for black sea bass. It should be a uniform set of rules, how we handle this, if we're going to ever do this. I've always had my doubts about splitting the recreational sector, because of some of the problems I've seen over the years.

One sector fighting with another sector, whether it was the Gulf, whether it was in Maryland in the early days. But I really think it should be in an overall amendment to look at how we do it, and if we are going to do it, how do we do it for summer flounder, black sea bass, and other species to make it easier? I would approve moving this out of the rebuilding amendment, because I think it's just going to add confusion and a lot more controversy to something that you need to get done.

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CHAIRMAN BATSAVAGE: Mike Luisi.

MR. LUISI: I will say, I'll just put it out there as a member of the Board, speaking for the state of Maryland. I do think, I support Adam's suggestion. I have enough concern in moving forward with just bluefish, given that we would be required to use MRIP data to establish those allocations for the sectors, provides enough concern in my mind.

I think taking some time to consider how we might better inform those allocations to the sectors, through possibly implementing mandatory state level VTR data down the road, is where we should go. I do like the idea that under the Recreational Reform Initiative, which we'll be discussing later this afternoon, that this is developed further. If it were to stay in the document, I would agree that B and D, I would like to see those removed.

I think accountability at the sector level, which is how I view Option C, is where sector separation should be, and therefore if it stays in, I would like to see the other two options removed. But I would support the removal completely, with an acknowledgement that it would be developed further, and considered along with summer flounder, scup, and black sea bass under the Recreational Reform Initiative.

MS. KERNS: Chris, I just wanted to let you know that Joe Cimino and Mike Pentony, and I think Tony DiLernia, if I haven't told you him before, also raised their hands.

CHAIRMAN BATSAVAGE: Oh great, thanks. Nichola Meserve.

MS. MESERVE: I think my points have really been made already, so I'll be quick. Just to say that I agree that this should be removed from the bluefish amendment, and considered in a more comprehensive and multispecies approach. When we do talk about recreational reform later today, eVTRs is there as an issue

that will require an amendment. I think this for-hire sector separation and eVTRs for the for-hire fleet really belong together in their own document, where they can be fully considered.

CHAIRMAN BATSAVAGE: Justin Davis.

DR. JUSTIN DAVIS: I think my comments are going to largely echo those of Jason McNamee that I'm concerned about taking this out. The way I've felt about this all along was absent the idea of whether this is something we should ultimately do. That we sort of owed it to the for-hire sector to pursue this, and have this discussion, because it's something that there has been a lot of interest in.

Hopefully, if we put some work into it, really flesh this out, and put it out in front of the public and get some public comment, we could maybe kind of put this to bed one way or the other, for maybe not forever, but at least for a long period of time. My concern about taking this out, in favor of putting it in some larger comprehensive initiative, whether that is the Recreational Reform Initiative, or something else, is that that management action doesn't yet exist.

While I sense there is a commitment to undertaking such a management action. You know it's not clear to me what that is going to be. My concern is just that this will sort of get lost in limbo, and also if the Fluke, Scup, Black Sea Bass Board initiates a Recreational Reform management action, I think that's great. But then obviously it's kind of unclear to me how that would include bluefish, unless this Board was working jointly with that Board on that action. Those are my concerns about removing it at this point.

CHAIRMAN BATSAVAGE: Joe Cimino.

MR. CIMINO: I want to put my support towards most of what's been mentioned. To alleviate Justin's fears that they do need to move together, that is bluefish with flounder, scup,

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and sea bass, and really just a holistic approach to how this happens. As the FMAT pointed out, maybe it doesn't happen until further down the road, and so recreational reform discussions need to happen first. I do hope as both the Council and a Board member that we do show that commitment today, and then again next week.

CHAIRMAN BATSAVAGE: Mike Pentony.

MR. MICHAEL PENTONY: I just wanted to echo a lot of the previous comments supporting Adam's proposal to remove this at this time from this action, but address it more comprehensively, as we'll be discussing this afternoon in the holistic recreational reform approach.

CHAIRMAN BATSAVAGE: Tony DiLernia.

MR. DILERNIA: I support sector separation, but before you go to sector separation, you're going to have to have mandatory reporting for all the for-hire vessels, both on the state and federal level, and you're going to need a few years' worth of data to see exactly what's being caught. Until that process is in place, I think sector separation, pursuing it at this time is going to be an exercise in futility.

CHAIRMAN BATSAVAGE: We've heard a mixed perspective on this. I guess, Adam, I'll go back to you. It might be the easiest way to do this is if you want to put a motion up to see where people fall on whether to remove sector separation from this amendment, and take it up in a more comprehensive amendment. I'll allow you to do that if you would like.

MR. NOWALSKY: On behalf of the Bluefish Board and the Council, I would move to stop further development of recreational sector separation by the FMAT as part of this amendment. I recommend that once the Recreational Reform Initiative be formally started, this issue be added to recreational reform for bluefish.

MR. COLSON LEANING: Sorry Adam, I wasn't able to transition over to Maya in time, and I am admittedly one of the worst motion takers at the Commission. If you don't mind repeating it.

MS. KERNS: Dustin, in order to keep everything correct in our files can we actually switch over to Maya, so we do this properly?

MR. COLSON LEANING: I will happily.

MR. NOWALSKY: I'll offer another alternative if you want to move on. I'll type something up and send it over, or if you want to dispense with this now, we'll take the time to do it. Whatever your preference is.

MS. KERNS: I think it's fine, Adam, just give us one second. Then if you can just read slowly for Maya, and you will be able to see what she's typing, so you will be able to see the pace that she's going.

MS. MAYA DRZEWICKI: I'm ready whenever.

MS. KERNS: She's ready for you.

MR. NOWALSKY: I move to remove recreational for-hire sector separation from further development of this amendment. Further development of for-hire sector separation should be considered under comprehensive recreational reform initiatives. That motion would be on behalf of the Board and the Council.

MS. KERNS: Maya, if you could just write motion by and then below that say Board and then Council below Board. Then put Mr. Nowalsky next to the semicolons for each of those, and then we'll find out who our seconders are.

MS. KERNS: Eric Reid, are you seconding that?

MR. ERIC REID: Yes, for the Board.

These minutes are draft and subject to approval by Bluefish Management Board.
The Board will review the minutes during its next meeting.

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MS. KERNS: Joe Cimino, are you seconding that for the Council?

MR. CIMINO: Yes.

MS. KERNS: Maya, for Council you can write Mr. Nowalsky and Mr. Cimino.

CHAIRMAN LUISI: Chris, as Co-Chair, can I jump in really quickly with a suggested edit to the motion?

CHAIRMAN BATSAVAGE: Oh yes, absolutely.

CHAIRMAN LUISI: May I suggest in the first sentence that we just be a little clearer, so separation from further development in the bluefish amendment, since we are talking about a lot of different actions. Yes, we are talking about bluefish right now, but I think it would just help clarify, with all the joint meetings and with all the joint actions that we're considering at the same time right now. If Adam and Eric and Joe are okay with that, that would be my recommendation.

CHAIRMAN BATSAVAGE: Is that modification acceptable to the maker and the two seconding the motion?

MR. NOWALSKY: Sure, further specification is definitely appropriate here. I think it will be even more important that we continue with those type of definitions. I suspect this Board will need to begin meeting jointly at some point in time with other boards, so I'll try to keep that in mind in future motions, to make sure things stick with the species they are intended for, thank you.

CHAIRMAN BATSAVAGE: Eric and Joe, are you okay with that?

MR. REID: Eric is okay.

MR. CIMINO: Yes.

CHAIRMAN BATSAVAGE: I'll see if there is any further discussion on this motion. I know we've talked about it a little bit already beforehand, but see if there is anyone else who has any thoughts. I guess while we do that Maya can just make that modification to the amendment, just to make it clear this is for bluefish. Any other comments or discussion by the Board and Council?

MS. KERNS: You have Jason McNamee and Tony DiLernia.

CHAIRMAN BATSAVAGE: Okay, Jason.

DR. McNAMEE: I'll be brief. I'll just state that I will likely support this, but I just want to be clear on the record that that support is because my read of this motion is that this will be put into the Recreational Reform Initiative. I'm taking it as some confirmation that it's not just disappearing, that it's going into another venue.

CHAIRMAN BATSAVAGE: Toni, you said Tony DiLernia is next in the queue?

MR. DiLERNIA: I was going to, I thought I had my hand up. I support the motion, we'll just let it go at that. Thank you.

CHAIRMAN BATSAVAGE: Any other discussion on the motion?

MS. KERNS: I do not see any additional hands at this time.

CHAIRMAN BATSAVAGE: Okay, I'll go ahead and read it into the record. Move to remove recreational for-hire sector separation from further development to the bluefish amendment. Further development of the for-hire sector separations should be considered under comprehensive recreational reform initiatives. We'll try this first. Is there any objection to this motion? If there is then we'll go ahead and do formal votes.

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MS. KERNS: Chris, do we need time for a caucus? I didn't know. I heard some talking back and forth in the sound, so I wasn't sure if that was people talking to each other. I see a hand up from Emerson. I don't know if he's asking for a caucus or he's objecting.

CHAIRMAN BATSAVAGE: Emerson.

MR. EMERSON C. HASBROUCK: Both.

CHAIRMAN BATSAVAGE: Okay great, no worries. I'll go ahead and maybe two minutes for the Board to caucus, and then we'll call the question.

MS. KERNS: Chris, we can do what we did in striped bass, where we can have one person from each state raise their hand to vote, and I'll just call off the state, and that way states can hear that I'm counting them, to make sure they actually do have their hand raised under the proper category.

CHAIRMAN BATSAVAGE: Yes, that will be great, thanks. Okay, do any Board members or states still need time to caucus, or is everyone ready to call the question?

MS. KERNS: I don't see any hands asking for more time.

CHAIRMAN BATSAVAGE: All right, so we will start with the Bluefish Board, and just FYI, I will not be voting on behalf of North Carolina, our Governor's Appointee is unable to join us, due to widespread internet outages in the Wilmington area after the hurricane this week. But I just choose not to vote on this as a Board member. Call the question for the Board, all those in favor, the designated person for your state, please raise your hand.

MS. KERNS: Again, I'll read off each state and if you thought you voted in favor yes, and I don't read your name, please speak up. We have Delaware, Rhode Island, New Jersey, Maryland, Connecticut, Massachusetts, New Hampshire, Maine, Florida, Georgia, NOAA Fisheries, South

Carolina, PRFC. Dustin, how many states did I count out?

MS. ELLEN BOLEN: Hey Toni, this is Ellen. I should have my hand up for Virginia.

MS. KERNS: You do not, just so you know. Now you do, now your hand it up, and Virginia.

CHAIRMAN BATSAVAGE: Say it again, Dustin.

MR. COLSON LEANING: That would be a total of 14.

MS. KERNS: Okay.

CHAIRMAN BATSAVAGE: Okay, all those opposed please raise your hand.

MS. KERNS: I have New York, and that is all.

CHAIRMAN BATSAVAGE: Okay, abstentions.

MS. KERNS: I do not see any abstentions.

CHAIRMAN BATSAVAGE: Okay, null votes.

MS. KERNS: I do not see any null votes.

CHAIRMAN BATSAVAGE: Okay, the motion passes 14 to 1 to 0 to 0. For the Council, I'll turn it over to Mike Luisi.

CHAIRMAN LUISI: For the Council, let me ask this. Is there any opposition to the motion?

MS. KERNS: I don't see any hands, Mike.

CHAIRMAN LUISI: Okay, we'll give it another five seconds. If you oppose the motion as a member of the Council, just please raise your hand and Toni will call that out, and if so then we'll call the vote. Anything, Toni?

MS. KERNS: No hands.

CHAIRMAN LUISI: Okay, I'll call it a motion then is approved by consensus, so the motion

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passes both the Board and the Council. Back to you, Chris.

CHAIRMAN BATSAVAGE: Dustin and Matt, I think you've got everything you needed for that issue, so we can move on to Issue number 7, sector transfers, whenever you're ready, I know you've got a couple screens right now.

MR. COLSON LEANING: Yes, this is Dustin. Maya, are you able to pull up the presentation we shared with you? Perhaps it would be easier in case another motion comes. Otherwise, I can just take control back.

MR. SEELEY: Maya, it's Slide 47.

MR. COLSON LEANING: Slide 47 with Issue 7 Sector Transfers displayed on top. Thanks, Maya.

CHAIRMAN BATSAVAGE: Any comments or feedback from the Board and Council on this issue?

MR. COLSON LEANING: Mr. Chair, if I may. Now that we have removed recreational sector separation, this last row is no longer pertinent, so we can skip that. Really the only feedback we're receiving here is criteria for prohibiting a transfer. Maybe some discussion on what that may be if the stock is overfished or overfishing is occurring, or the stock is rebuilding. Should we prohibit the use of transfers?

CHAIRMAN BATSAVAGE: Thanks, Dustin, for focusing in on where we need the feedback the most. Again, any feedback or comments from the Board and Council on criteria for prohibited transfers.

MS. KERNS: I don't have any hands.

CHAIRMAN BATSAVAGE: I guess Dustin, if no feedback then is the FMAT able to develop this further? Are you going to need a little more to really do this, or just do all of it? I don't want to

leave this meeting without giving the FMAT the guidance that they need.

MR. COLSON LEANING: Yes, so this is a relatively simple point. What the FMAT can do is put forward an option that they see as best fit, and when it comes to approve the final range of alternatives for inclusion in a public hearing document or a draft amendment, the Board and Council can change what the FMAT has decided, if they have any more thoughts on this issue later on. I think we have what we need for now, and we can move on to Issue 8.

CHAIRMAN BATSAVAGE: Unless any other Board or Council members have a last-minute thought, we'll just move on to Issue 8.

MS. KERNS: I see no hands raised.

MR. COLSON LEANING: As a reminder, the FMAT is recommending removal of this approach.

CHAIRMAN BATSAVAGE: Any comments, feedback on this issue?

MS. KERNS: You have Nichola Meserve and Jason McNamee, and Tony DiLernia.

CHAIRMAN BATSAVAGE: Okay, Nichola.

MS. MESERVE: I agree with the FMAT's recommendation to remove it in its current format as it has been proposed. I think I applaud the FMAT for trying to come up with something that responded to the Board's request for a refereed approach, but I think this is really overly complicated and burdensome, and won't necessarily improve our current system. I would separately just offer a suggestion to ASMFC. I think, to somehow provide some more transparency in when states seek quota transfers. Right now, we get a weekly e-mail that says when a transfer has been approved, but that might be too late to a state that's considering asking that same state for a transfer. You might have missed it. If

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there could be some consideration given to some way that transfer requests could be made more transparently, then I think that would be a benefit to all the states, whether on the receiving or requesting side.

MS. KERNS: Mr. Chairman, can I just put something out there? The Commission doesn't approve the transfers for bluefish. Those get approved by NOAA Fisheries. We would have to work something out with them in order to help out with that Nichola.

MS. MESERVE: All right that makes sense. I guess I just saw the ASMFC as before, and where all of the states are included. I still think it would be useful for all of us to know more openly when transfers are being requested between the states. Thanks.

CHAIRMAN BATSAVAGE: That's I guess a question I asked earlier. Are there any issues different with bluefish and other quota transfers, but to kind of build on that? A question for Toni Kerns. Is this something that at least on the ASMFC side of things should be discussed in more detail for all of the quota managed species that have quota transfers, instead of just bluefish. I see some common themes, you know with bluefish versus menhaden versus spiny dogfish, et cetera.

MS. KERNS: Most of them are somewhat similar, we get a state transfer letter from the receiving and accepting state, and then we approve them. In the past we have not sent out letters to the Board letting the Board know that we have received these letters from the states making requests or receiving.

We do it after the transfer has been finalized. We could send an e-mail out, I guess prior to finalizing the transfer, but I do believe that we're typically cc'd on transfers for summer flounder and bluefish, but we are not the finalizer of those transfers, NOAA Fisheries is. We do the transfers for scup and black sea bass,

and obviously for other species as well, as you mentioned.

We could come up with a general policy for communication. Perhaps it's something that could get discussed at the Executive Committee level, and then the Policy Board, to finalize an overarching policy. Each plan is a little bit different, how it's written in and how the rules are supposed to be followed, in terms of the transfers themselves for individual species.

CHAIRMAN BATSAVAGE: That might be something to think about long term with this issue. Next up is Jay.

DR. McNAMEE: Yes, I just wanted to also, just because I spoke on it earlier, just kind of acknowledge that I also support removing the refereed approach. I applaud the effort, and as someone who is a proponent of doing something here. I didn't offer any great ideas. I applaud the FMAT for giving it a shot, but also agree with them that this doesn't work. I also appreciated what Maureen said earlier, and I think that could be a good approach for bluefish moving forward, if Rhode Island and New York could communicate a bit. I am happy to do so. Just wanted to offer my thoughts on that.

CHAIRMAN BATSAVAGE: Tony DiLernia.

MR. DiLERNIA: This is an unnecessary complication. I would remove it. I agree with what Nichola said, so long as everyone knows who shares bringing what you're okay. This just complicates things, and I would definitely remove it.

CHAIRMAN BATSAVAGE: Any objection from any Board or Council members on removing the refereed approach from this amendment?

MS. KERNS: I do not see any hands, Mr. Chairman.

CHAIRMAN BATSAVAGE: All right, great, thanks. That covers the issues that the FMAT

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was really looking for feedback from the Board and Council on. Are there any other issues in the amendment that any Board or Council members want to address at this point?

MR. SEELEY: Mr. Chairman, if I may. This is Matt. I do believe that we skipped over the rebuilding plan, Issue 5. I don't think there are any changes that would be expected here are necessary, but I do think since we're not meeting again until December, that we should maybe pull that up and see if there are any comments.

CHAIRMAN BATSAVAGE: Good catch, thanks.

MR. SEELEY: Maya that would be Slide 24.

CHAIRMAN BATSAVAGE: As you see on the screen here, the FMAT is requesting further guidance on which alternatives, if any should be removed for a rebuilding plan option. Open up for feedback on that.

MS. KERNS: So far, I don't have any hands.

CHAIRMAN BATSAVAGE: Unless anyone objects, then yes, the FMAT will continue developing all of these options for rebuilding.

MS. KERNS: I have Adam Nowalsky.

CHAIRMAN BATSAVAGE: Adam.

MR. NOWALSKY: I know we're not quite done with the Bluefish Board, but I just wanted to extend on my further comments earlier that given the decision we made on the for-hire sector separation, that those members of the Bluefish Board that are not part of the Summer Flounder, Scup, and Black Sea Bass Board. I would like to invite them to the recreational reform discussion this afternoon, it's on the agenda for a set time right now. I know we're running a little behind here, so I'm not exactly sure what time that will occur specifically on the agenda. It will occur after lunch, and I will certainly include any members of the Bluefish

Board that are not members of the Summer Flounder, Scup, and Black Sea Bass Board that would like to comment during those discussions, they are invited to do so.

MS. KERNS: Mr. Chairman, you have Doug Haymans.

MR. DOUG HAYMANS: I was just going to make that exact point, I guess Adam and I are on the same wave length, since South Carolina, Georgia, and Florida aren't on that. I would suggest maybe during that next meeting that we can move or attempt to move that recreational amendment out of. Oh, I guess is there a platform somewhere where the entire Commission can be part of it, rather than it being within a species board?

CHAIRMAN BATSAVAGE: If I understood Adam correctly, he's going to allow the states, not on the Flounder, Scup, and Black Sea Bass Board this afternoon to join in on the conversation over the Recreational Reform Initiative. Adam, if I misspoke, please let me know. But I think that's the invitation that you're offering to the Bluefish Board, particularly the members who aren't on Summer Flounder, Scup, and Black Sea Bass or on the Mid-Atlantic Council.

MR. NOWALSKY: For today, yes that is my invitation. Leadership has discussed the fact that given previous comments that recreational reform may become a more comprehensive species approach, beyond just summer flounder, scup, and black sea bass. We are aware of the fact that we're going to need to have discussions about to find the correct venue for recreational reform discussions moving forward with the Council.

Whether that's to meet jointly, not just with one of the two Boards with the Council, but to have Bluefish Board meetings jointly with the Summer Flounder, Scup, and Black Sea Bass Board at the same time, or some other mechanism that is on the radar of staff and leadership, both the Council and the

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Commission with the Board Chairs, and we can expect to have more information for Commissioners as we move forward.

I think what we need to do is one, have the discussion this afternoon, where the possibility is on the table of a formal action being initiated and then once we have that I think it will also depend somewhat on where this issue falls, with regards to summer flounder, scup and black sea bass specifically, because for-hire sector separation as part of that amendment will not be taken up this afternoon. That won't be taken up until next week for summer flounder, scup, and black sea bass.

CHAIRMAN BATSAVAGE: Thanks for the clarification on that, Adam. Yes, definitely encourage the folks to my south to listen in this afternoon and participate in that discussion. I think it is very pertinent to bluefish. Is there anything else from the Board and Council on the bluefish amendment?

MS. KERNS: I do not see any additional hands.

CHAIRMAN BATSAVAGE: Matt and Dustin, anything else? Did you get everything you needed for the FMAT to continue developing this?

MR. COLSON LEANING: I think so, Matt.

MR. SEELEY: Yes, I think we're good, thanks Dustin, thanks Mr. Chairman.

CHAIRMAN BATSAVAGE: Thanks again, as always for walking us through the issues in this amendment, I know it's not an easy task, and the FMAT has been working hard to get to this point. Now they've got some work ahead.

**CONSIDER APPROVAL OF THE FMP AND STATE
COMPLIANCE FOR BLUEFISH FOR THE
2019 FISHING YEAR**

CHAIRMAN BATSAVAGE: The last item on the agenda is just a Bluefish Board specific item,

and that is Consider Approval of the FMP and State Compliance for Bluefish for the 2019 fishing year. I just want to do a time check. I know we're running a little behind schedule, but Toni, do we have time to get this completed before we adjourn?

MS. KERNS: Chris, yes. Dustin, if you could just go to the specific recommendations and skip the rest of the presentation, since most of that will be covered next week during the Monitoring Committee Report, that would be great. Just specific to the recommendations.

MR. COLSON LEANING: Yes, happy to. Toni, are you suggesting that we just put it forward to the Board for consensus about taking the PRT recommendations, and then doing the FMP Review motion separately through e-mail?

MS. KERNS: No, just giving the PRT recommendations, and then do the FMP review approval.

CHAIRMAN BATSAVAGE: This is included in the briefing materials, so folks had the chance to look at it or can. Yes, I'll just hand it over to Dustin, so he can go over the recommendation.

MR. COLSON LEANING: Yes, so I'll try to do a very truncated version of this presentation. Essentially, the PRT found that all states implemented regulations and monitoring programs that were consistent with the intent of the FMP, and we also had three states that requested *de minimis* status for 2020; Maine, South Carolina, and Georgia.

Then in addition to those recommendations for approval of the state compliance reports and State Compliance, the PRT also recommends that the Board task the TC with reviewing the effectiveness of the Addendum 1 sampling design, and reevaluating the optimal geographic range and sample size for bluefish data.

Essentially, by reviewing state by state Addendum 1 sampling progress, the PRT noted

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that it can be especially challenging for some northern states to achieve 50 samples before July, considering that bluefish may only begin to become available in June. The PRT thought that this would be helpful to reconsider the seasonal requirements for samples, based on updated recreational data.

In addition to this, the PRT also recommends that the TC look into the increased importance of recreational discards in stock assessments, and know that generating reliable discard lengths data from recreational anglers can improve the robustness of stock assessments moving forward. That is a very quick and dirty version of what I was going to present. But essentially, we have the PRT recommendation for approval of the FMP Review, State Compliance Reports, and *de minimis* requests from Maine, South Carolina, and Georgia's commercial fisheries, as well as the PRT recommendations listed here.

CHAIRMAN BATSAVAGE: I appreciate you getting through that very quickly, but I think you covered everything, the most important things. Any questions for Dustin on the FMP review?

MS. KERNS: Mr. Chairman, I think we could do an approval of the document and the *de minimis* request, and if the Board is interested in having the TC look into these items, then we could just do all of that by consensus.

CHAIRMAN BATSAVAGE: Instead of a formal motion? Just seeing if just by consensus if the Board approves the FMP Review and the tasks the PRT is recommending the TC do?

MS. KERNS: Correct. I see Nichola with her hand up.

CHAIRMAN BATSAVAGE: Nichola.

MS. MESERVE: I definitely agree with these recommendations from the PRT. The second one really gets to the discussion that we've

been having a lot lately, when we talk about should we use the GARFO method or the MRIP Method for doing the discard estimates in the recreational fishery. It's pointed to us the fact that we really need some additional discard length data. **That one is really key, but I support those recommendations, and additionally, I would move to accept the FMP Review and approve the *de minimis* requests from Maine, South Carolina, and Georgia.**

CHAIRMAN BATSAVAGE: Yes, we have a motion up, it will be up on the board here soon to approve the FMP Review and *de minimis* status for those states. Get that up on the screen.

MS. KERNS: Justin Davis is seconding that.

CHAIRMAN BATSAVAGE: Move to approve the PRT recommendations, the Bluefish Fishery Management Plan Review of the 2019 fishing year, state compliance reports, and *de minimis* requests for Maine, South Carolina and Georgia's commercial fisheries. No objections?

MS. KERNS: No, I don't see any hands.

CHAIRMAN BATSAVAGE: Great, so that's approved and I look forward to the work by the Technical Committee, especially looking at ways to collect more lengths on released recreational bluefish.

ADJOURNMENT

CHAIRMAN BATSAVAGE: Last thing on the agenda is any Other Business. Does any Board or Council members have any other business to discuss for today's meeting?

MS. KERNS: I don't see any additional hands.

CHAIRMAN BATSAVAGE: Unless there is any objection, the Bluefish Board meeting with the Council is adjourned.

(Whereupon the meeting adjourned at 11:10
a.m. on August 6, 2020)

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The Board will review the minutes during its next meeting.



Atlantic States Marine Fisheries Commission

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MEMORANDUM

January 12, 2021

To: Bluefish Management Board
From: Tina Berger, Director of Communications
RE: Advisory Panel Nominations

Please find attached a nomination to the Bluefish Advisory Panel – John G. LaFountain, a seafood processor/dealer from Rhode Island. Please review this nomination for action at the next Board meeting.

If you have any questions, please feel free to contact me at (703) 842-0749 or tberger@asmfc.org.

Enc.

cc: Dustin Colson Leaning

M21-05

BLUEFISH ADVISORY PANEL

Bolded names await approval by the Bluefish Management Board

January 12, 2021

Maine

David W. Gittins (rec)
85 Bog Road
York, ME 03909
Phone: (207)363-3874
fishtale@maineflyfishing.net
Appt. Confirmed 8/10/04
Appt. Reconfirmed 8/08

Vacancy

New Hampshire

1 Vacancy – recreational

Massachusetts

Tom Smith (comm. strike gillnet)
17 Beach Plum Lane
Orleans, MA 02653
Phone: 508.922.9737
Bluefish4@comcast.net
Appt. Confirmed 2/19

Rhode Island

Francis W. Blount Jr. (charterboat)
390 Bridgetown Road
Saunderstown, RI 02883
Phone (day): (401)783-4988
Phone (eve): (401)789-2374
FAX: (401) 782-8520
francesflt@aol.com
Appt. Confirmed 5/10/06
Appt Reconfirmed 5/10

John G. LaFountain (seafood processor/dealer)

65 Turner Way
Wakefield, RI 02879
Phone: 401.575.8765
foxseafood@gmail.com

Connecticut

Robert Streich (rec)
290 Lakeside Drive
Bridgeport, CT 06606
Phone: (203)374-3664
streichrc@aol.com
Appt. Confirmed 8/10/04

Appt. Reconfirmed 8/08

T.J. Karbowski (for-hire)
24 Norwill Drive
North Branford, CT 06471
Phone: 203.314.3765
tedkarbowski@yahoo.com
Appt. Confirmed 12/10/19

New York

Thomas E. Melton (rec)
48 Dongan Boulevard
Manorville, NY 11949
Phone (day): (516)345-5200
Phone (eve): (516)878-8146
FAX: (516)345-5304
71240.347@compuserv.com
Appt. Confirmed: 6/4/98
Appt. Reconfirmed 10/02; 10/06; and 5/10

James Kaminsky (comm)
75 Woodcliff Drive
Mattituck, NY 11952
Phone: (631)298-4791
FAX: (631)298-2120
Appt. Confirmed 10/17/94
Appt. Reconfirmed: 10/98; 10/02; and 10/06

New Jersey

Capt. Kevin Wark (comm)
1508 Bayview Avenue
Barnegat Light, NJ
Phone (dock): (609)494-0133
Phone (home): (609)494-8123
Appt. Confirmed 10/17/94
Appt. Reconfirmed: 10/98; 10/02; 2/9/06;
5/17/10

Robert Bogan (rec/charterboat)
520 Summit Dr
Pt Pleasant Beach, NJ 08742-2779
Phone (day) (732)295-7569
Phone (eve): (732)295-1247
Appt. Confirmed 4/2000
Appt Reconfirmed 2/9/06 and 5/17/10

Delaware

Albert Adams, Jr. (comm)
RD 1, Box 406
Milford, DE 19963
Phone: (302)422-8940
Appt. Confirmed 10/17/94
Appt. Reconfirmed: 10/98; 10/02; and 10/06

Robert L. Tribbitt, Sr (rec)
34795 Pepper Road
Frankford, DE 19945
Phone (day): (302)856-5488
Phone (eve): (302)732-6400
FAX: (302)856-4381
Appt. Confirmed 10/17/94
Appt. Reconfirmed: 10/98; 10/02 and 10/06

Maryland

2 Vacancies

Virginia

Larry Snider
213 Skipper Court
Hampton, VA 23669
Phone: (804)850-4912
Appt. Confirmed 10/24/96
Appt. Reconfirmed 9/15/00; 1/05; and 5/10

Vacancy (for-hire & rec)

North Carolina

Robert J. Lorenz (rec)
1509 Meridian Terrace
Wilmington, NC 28411
Phone: 910.232.4755
blpinfisher@gmail.com
Appt. Confirmed 2/19

Vacancy – commercial

South Carolina

Buddy Bullard (rec)
805 West Fifth St.
Hampton, SC 29924
Phone (day): (803)522-2121
Phone (eve): (803)943-2100
FAX (day): (803)522-3107
FAX (eve): (803)943-5700

Email: bullard@coldwellbanker.com

Appt. Confirmed 10/17/94
Appt. Reconfirmed: 10/98; 10/02; 10/06 and 5/10

Georgia

2 vacancies

Potomac River Fisheries Comm.

Thomas L. Crowder, Jr. (comm/pound net)
2135 Dasher Drive
Lusby, MD 20657
Phone (day): (410)610-3117
Phone (eve): (410)326-6377
kimchwdr@worldnet.att.net
Appt. Confirmed 4/2000
Appt. Reconfirmed 1/05 and 5/10

Vacancy – recreational

Florida

Russell Howard Hudson (comm. hook & line/for-hire captain)
1045 West International Speedway Boulevard
Daytona Beach, FL 32114
Phone (home): 386.239.0948
Phone (cell): 386.253.2843
FAX: 386.253.2843
Email: DSF2009@aol.com
Appt. Confirmed 2/19

George J. Geiger (charterboat)
566 Ponoka Street
Sebastian, FL 32958
Phone: (407)388-3183
Fax: (407)723-4107
Appt. Confirmed 10/30/95
Appt. Reconfirmed: 8/99
Appt. Reconfirmed: 4/06
Appt Reconfirmed 5/10



ATLANTIC STATES MARINE FISHERIES COMMISSION

Advisory Panel Nomination Form

This form is designed to help nominate Advisors to the Commission's Species Advisory Panels. The information on the returned form will be provided to the Commission's relevant species management board or section. Please answer the questions in the categories (All Nominees, Commercial Fisherman, Charter/Headboat Captain, Recreational Fisherman, Dealer/Processor, or Other Interested Parties) that pertain to the nominee's experience. If the nominee fits into more than one category, answer the questions for all categories that fit the situation. **Also, please fill in the sections which pertain to All Nominees (pages 1 and 2). In addition, nominee signatures are required to verify the provided information (page 4), and Commissioner signatures are requested to verify Commissioner consensus (page 4). Please print and use a black pen.**

Form submitted by: John G LaFountain State: RI
(your name)

Name of Nominee: John G LaFountain

Address: 65 Turner Cove Way

City, State, Zip: Wakefield RI 02879

Please provide the appropriate numbers where the nominee can be reached:

Phone (day): 401-575-8765 Phone (evening): _____

FAX: _____ Email: Foxseafood@gmail.com

.....
FOR ALL NOMINEES:

1. Please list, in order of preference, the Advisory Panel for which you are nominating the above person.

- 1. Bluefish
- 2. _____
- 3. _____
- 4. _____

2. Has the nominee been found in violation of criminal or civil federal fishery law or regulation or convicted of any felony or crime over the last three years?

yes _____ no

3. Is the nominee a member of any fishermen's organizations or clubs?

yes _____ no

If "yes," please list them below by name.

FOR RECREATIONAL FISHERMEN:

1. How long has the nominee engaged in recreational fishing? _____ years
2. Is the nominee working, or has the nominee ever worked in any area related to the fishing industry? yes _____ no _____

If "yes," please explain.

FOR SEAFOOD PROCESSORS & DEALERS:

1. How long has the nominee been employed in the business of seafood processing/dealing? 13 years

2. Is the nominee employed only in the business of seafood processing/dealing?

yes no _____ If "no," please list other type(s) of business(es) and/or occupation(s):

3. How many years has the nominee lived in the home port community? 13 years

If less than five years, please indicate the nominee's previous home port community.

FOR OTHER INTERESTED PARTIES:

1. How long has the nominee been interested in fishing and/or fisheries management? _____ years
2. Is the nominee employed in the fishing business or the field of fisheries management? yes _____ no _____

If "no," please list other type(s) of business(es) and/or occupation(s):

FOR ALL NOMINEES:

In the space provided below, please provide the Commission with any additional information which you feel would assist us in making choosing new Advisors. You may use as many pages as needed.

Hello,

I am a large stakeholder in the bluefish fishery. Smoked Bluefish is one of our most popular products that we produce at Fox Seafood Inc. of which my wife and I are the principle owners. We buy fish directly from fishing vessels here in RI and from many vendors on the East Coast. I have studied the history of bluefish landings historically and always keep tabs on what is being landed up and down the coast weekly speaking to my suppliers and fisherman in multiple states. I have a good feel for how the fish are moving. Thank you

Nominee Signature: 

Date: 12.14.20

Name: John G LaFountain
(please print)

COMMISSIONERS SIGN-OFF (not required for non-traditional stakeholders)

State Director

State Legislator

Governor's Appointee

Atlantic States Marine Fisheries Commission

Business Session

Thursday, February 4, 2021

4:15 – 4:30 p.m.

Webinar

Draft Agenda

The order in which these items will be taken is subject to change;
other items may be added as necessary.

1. Welcome/Introductions (*P. Keliher*) 4:15 p.m.
2. Committee Consent 4:15 p.m.
 - Approval of Agenda
 - Approval of Proceedings from October 2020
3. Public Comment 4:20 p.m.
4. Consider Noncompliance Recommendations (if Necessary) **Final Action** 4:25 p.m.
5. Other Business 4:30 p.m.
6. Adjourn 4:30 p.m.

**DRAFT PROCEEDINGS OF THE
ATLANTIC STATES MARINE FISHERIES COMMISSION
BUSINESS SESSION**

**Webinar
October 22, 2020**

These minutes are draft and subject to approval.
The Board will review the minutes during its next meeting.

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1. **Approval of agenda** by Consent (Page 1).
2. **Approval of Proceedings from February 6, 2020** by Consent (Page 1)
3. **Move to approve the 2021 Action Plan** (Page 10). Motion by Bill Anderson; second by Tom Fote. Motion carried (Page 10).
4. **Move to nominate Pat Keliher as Chair of the ASMFC, effective at the end of the Annual Meeting** (Page 11). Motion by Jim Gilmore on behalf of the Nominating Committee. Motion approved by Consent (Page 11).
5. **Move to nominate Spud Woodward as Vice-Chair of the ASMFC, effective at the end of the Annual Meeting** (Page 11). Motion by Jim Gilmore on behalf of the Nominating Committee. Motion approved by Consent (Page 12).
6. **Move to adjourn** by Consent (Page 13).

ATTENDANCE

Board Members

Pat Keliher, ME (AA)	Loren Lustig, PA (GA)
Cheri Patterson, NH (AA)	John Clark, DE, proxy for D. Saveikis (AA)
Ritchie White, NH (GA)	Roy Miller, DE (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)	Lynn Fegley, MD, proxy for B. Anderson (AA)
Dan McKiernan, MA (AA)	Russell Dize, MD (GA)
Raymond Kane, MA (GA)	Phil Langley, MD, proxy for Del. Stein (LA)
Jason McNamee, RI (AA)	Steve Bowman, VA (AA)
David Borden, RI (GA)	Sen. Monty Mason, VA (LA)
Justin Davis, CT (AA)	Bill Gorham, NC, proxy for Sen. Steinberg (LA)
Bill Hyatt, CT (GA)	Mel Bell, SC, proxy for P. Maier (AA)
Jim Gilmore, NY (AA)	Doug Haymans, GA (AA)
Emerson Hasbrouck, NY (GA)	Spud Woodward, GA (GA)
Joe Cimino, NJ (AA)	Jim Estes, FL, proxy for J. McCawley (AA)
Tom Fote, NJ (GA)	Marty Gary, PRFC
Adam Nowalsky, NJ, proxy for Asm. Houghtaling (LA)	Derek Orner, NMFS
Kris Kuhn, PA, proxy for T. Schaeffer (AA)	Sherry White, USFWS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Staff

Robert Beal	Laura Leach
Toni Kerns	Savannah Lewis
Kristen Anstead	Sarah Murray
Max Appelman	Joe Myers
Lindsey Aubart	Marisa Powell
Pat Campfield	Mike Rinaldi
Maya Drzewicki	Julie Defilippi Simpson
Dustin Colson Leaning	Caitlin Starks
Chris Jacobs	Deke Tompkins
Jeff Kipp	Geoff White
Heather Konell	

Guests

Bill Anderson, MD (AA)	Peter Fallon, Maine Stripers
Pat Augustine, Coram, NY	Cynthia Ferrio, NOAA
Joey Ballenger, SC DNR	Dawn Franco, GA DNR
Chris Batsavage, NC DENR	Tony Friedrich, SGA
Alan Bianchi, NC DENR	Pat Geer, VMRC
Jeff Brust, NJ DEP	Lewis Gillingham, VMRC
Mike Celestino, NJ DEP	Angela Giuliano, MD DNR
Jamie Darrow, NJ DEP	Carol Hoffman, NYS DEC
Jessica Daher, NJ DEP	Mike Luisi, MD DNR
Maureen Davidson, NYS DEC	Dee Lupton, NC DENR

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Guests (continued)

Chip Lynch, NOAA
John Maniscalco, NYS DEC
Nicola Meserve, MA DMF
Allison Murphy, NOAA
Ken Neill
Gerry O'Neill, CapeSeafoods
Michael Pierdinock, CPF Charters
Jeff Rose

Andrew Sinchuk, NYS DEC
Melissa Smith, ME DMF
Helen Takade-Heumacher, EDF
Beth Versak, MD DNR
Megan Ware, ME DMF
Chris Wright, NOAA
Erik Zlokovitz, MD DNR
Renee Zobel, NH F&G

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The Board will review the minutes during its next meeting.

The Business Session of the Atlantic States Marine Fisheries Commission convened via webinar; Thursday, October 22, 2020, and was called to order at 10:00 a.m. by Chair Patrick C. Keliher.

CALL TO ORDER

CHAIR PATRICK C. KELIHER: Welcome everybody to the Annual Meeting's Business Session.

APPROVAL OF AGENDA

CHAIR KELIHER: I'm going to roll right into the agenda items. First up is Committee consent on Approval of the Agenda. Does anybody have any additions or deletions or questions around the agenda? Seeing no hands, the agenda is approved by consensus.

APPROVAL OF PROCEEDINGS

CHAIR KELIHER: Then, the approval of the proceedings from the August 2020 meeting. Does anybody have any questions, additions, deletions for those proceedings? Seeing no hands, they are approved by consensus.

PUBLIC COMMENT

CHAIR KELIHER: Item Number 3 is Public Comment. Is there any member of the public that has comments for the Business Committee, the full Commission?

Not hearing anybody chime in, no hands.

REVIEW AND CONSIDER APPROVAL OF THE 2021 ACTION PLAN

CHAIR KELIHER: Great, we're going to move right on to Item Number 4, which is Review and Consider the Approval of the 2021 Action Plan. We have a big chunk of time scheduled for this. I want to make sure that we are able to do a good review, but if we could just hit the highlights, and then if we need to get any details somebody can please raise your hand as

the presentations are being made. I'll turn it right over to Bob Beal.

EXECUTIVE DIRECTOR ROBERT E. BEAL: Thanks, Pat, I think we'll go through our kind of regular format where each staff person will go through their section, and as you said just hit the highlights, and we'll pause after each goal to see if there are any questions, additions, deletions, that sort of thing. Toni Kerns is the first one with Goal 1, Fishery Management Section, if you're ready to go, Pat.

CHAIR KELIHER: Yes, please proceed.

FISHERIES MANAGEMENT

MS. TONI KERNS: Maya, if you'll just pull up and do your best to scroll through with me the Action Plan that will be great. We're going to start off. In bold are the new items that are coming through for each of the species, and as you recall we've split the species groupings into high priority and medium low priority, in terms of staff workload and focus for Commissioners.

For American eel we're going to continue on with the American eel benchmark stock assessment and peer review, which will be completed in 2022, as well as monitor the international action on the Convention of International Trade for Endangered Species, through communications with Fish and Wildlife Service. For lobster we will work on management actions to the benchmark stock assessment, as well as the resiliency document for Gulf of Maine. In addition, the Board added a white paper on the use of trackers, in particular for the focus for lobster vessels fishing in federal waters, and we'll need to add that bullet into the document specifically. For Atlantic Herring, we will finalize and implement Addendum III once the Amendment 8 has been finalized. If we need to, we will respond to that Amendment that NOAA Fisheries is working to do a final rule for.

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We'll also follow the work of New England Fishery Management Council for Framework 7, which is spawning protections in Georges Bank and North Nantucket Shoals, as well as Framework 8, which is the specifications and incidental catch limit, and respond if necessary. For Atlantic menhaden, we'll review the Amendment 3 quota allocations and initiate a management action if necessary, as well as initiate the benchmark assessment to be completed in 2022.

For striped bass we will work on Draft Amendment 7, to ensure stock rebuilding and address all of the current fishery management issues as talked about earlier this week, and complete the 2021 stock assessment and address the findings, most likely Amendment 7 if necessary. The Board will need to discuss, once we know what kind of recreational catch estimates we will have to determine if this stock assessment will be completed or not.

For black sea bass, we'll work with the Council on this. Some of the items here will also apply to summer flounder and scup, and I'll know which ones. But we will work with the Mid-Atlantic Council on finalizing an addendum or an amendment for commercial recreational allocation, kicking into our addendum their amendment on the commercial recreational allocation, taking into account calibrated recreational estimates.

We will also develop in coordination with the Council an action to address recreational reform, and this will also apply to summer flounder and scup. We will finalize the commercial state allocations through Addendum XXXIII, and contribute data for the 2021 management track assessment, and the 2022 research track assessment.

For bluefish, we will finalize the amendment that is looking at the commercial and recreational allocation that we are working on with the Mid-Atlantic Council. This includes the calibrated MRIP estimates, and goals and

objectives quota transfers and rebuilding programs. The recreational reform addendum also applies to bluefish. I don't think I said that before.

We will also review the effectiveness of the current fishery independent data requirement and evaluate an optimal range in sample size for age data that is required and necessary for the stock assessment. Bluefish will also undergo a management track assessment in '21, and a research track in 2022. Horseshoe crab will continue the ARM revisions.

For scup both of these actions have already been addressed under the black sea bass, and for summer flounder, the only additional thing that I haven't mentioned is developing in coordination with the Mid-Atlantic Council's management action, a management strategy evaluation regarding the benefits of minimizing discards, and turning discards into landings in the recreational sector. For tautog, we'll work on the 2021 stock assessment update, and consider any management responses if necessary in the fall. Then moving on to the medium-low priority species. For both Atlantic croaker and spot, we'll be implementing the measures triggered from the 2020 traffic light analysis, as outlined in Addendum III, and discussed earlier in this week. Coastal sharks there will be a SEDAR for the blacktip shark stock assessment, and we'll consider management response if necessary, and work closely with HMS for that.

We'll also monitor the activities of HMS, specifically with regards to HMS Amendment 14, which is looking at annual catch limit and accountability measures. If there is anything that we need to respond to for this, we will take those up. For cobia, we'll be implementing the Addendum that got approved today, which is a provision to the allocations and some of the de minimis rule measures.

For Jonah crab we'll be implementing all of the data elements to improve the data collection

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and characterization of the fishery, and continue to work with all of our partners, to make sure that these data elements are incorporated. We will also identify the data that is available, its limitations, the uncertainties around it, and make recommendations for stock assessment approaches for this fishery. We have yet to have a coastwide stock for Jonah crab.

The northern shrimp will conduct a stock assessment update and set specifications. The moratorium that has been in place for the last three years sunsets at the end of 2021. We'll also continue to explore long term management options given the environmental changes in the Gulf of Maine, and it's that shrimp has depleted stock status.

Red drum will continue to work on the simulations for future use of stock assessment models. For shad and river herring we'll continue to move on to the 2020 American shad benchmark stock assessment. Through this response we'll identify improvements to the fishery management plan, with regards to recreational catch.

For recreational management systems with low harvest and high abundance indexes looking at sustainable fishery management plan alternatives, as well as incorporation as assessment information in this SFMP. We'll also work on completing the shad updates to the shad habitat plan. These are just updates, not entire new habitat plans.

For spiny dogfish we'll be contributing data and participating in the 2022 research stock assessment. For winter flounder we'll work cooperatively with the New England Fishery Management Council to respond to the management track assessment. Things that are cross-cutting between multiple departments at the Commission include raising awareness of COVID-19 impacts to MRIPs availability to produce catch estimates.

We'll also raise awareness to MRIPs data standards, and impacts to the Commission's FMP and stock assessments. We'll be working to seek ways within our existing management structure to address the concerns of the recreational community, with regard to Commission managed and jointly managed species.

We'll also be participating in and provide administrative support for scenario planning activities to address changes in stocks and fisheries due to climate and fisheries governance. This is a collaborative effort along the coast with all three of the councils as well as GARFO and the Science Center. Then lastly, we'll evaluate COVID impacts on the 2020 fishery dependent and fishery independent data collection, and develop strategies to mitigate impacts to the stock assessment, as well as the FMP. That's all I have, Mr. Chair.

CHAIR KELIHER: Thanks, Toni. I see Tom Fote, you have your hand up, Tom.

MR. THOMAS P. FOTE: Yes, just by mistake.

CHAIR KELIHER: Anybody have any questions for Toni? Seeing none, we'll go right on to the next portion.

MS. KERNS: Before you go on. Maya, if there is a way to try to fill the whole screen. I think it's hard for some people to read the text. Maybe one more hit? Perfect, thanks.

MR. PATRICK A. CAMPFIELD: Good morning everyone, this is Pat Campfield. Can you hear me okay?

CHAIR KELIHER: Yes, go ahead, Pat.

SCIENCE

MR. CAMPFIELD: Goal 2 covers all of our fisheries research; surveys and stock assessment activities for 2021. First up under the Scientific Committee activities, we plan to evaluate and pursue expansion of coastwide

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stock assessment capacity through either a new hire, or strengthening capacity at the Northeast Fisheries Science Center to work on ASMFC assessments.

The second highlight is to continue incorporating socioeconomic information in the management documents through the work of our CESS Committee on economics and social sciences. Under data collection and the regional surveys. Under SEAMAP, a program that has been in place for almost four years, just one minor change to collaborate with the Southeast Coastal Ocean Observing Association, to potentially host the SEAMAP South Atlantic Survey data.

Under NEAMAP, a few new additions. The first is to develop common methodology and protocols for NEAMAP surveys, so that we are promoting consistent data collection across the various trawl surveys in the northeast area. In early 2020, before the travel restrictions and the pandemic hit, we conducted our first Maturity Staging Workshop.

If and when travel resumes in 2021, I would hope to build on that success, and host a second Maturity Staging Workshop through the NEAMAP partners. An additional workshop that would be valuable for the NEAMAP trawl survey community is a calibration workshop to develop common methods for how to conduct calibration, if and when changes in vessels are needed.

We have initiated a project to develop a genetic sampling and analysis repository for shad and river herring, in close collaboration with the U.S. Geological Survey. We highlight this project, but it's one of many new projects that we have collaborated on with USGS over the past few years, and look to further expand that partnership. Scrolling down to fisheries research, just one quick hit on stock assessment modeling. We just completed the 2020 American lobster stock assessment. One of the major recommendations for future assessments

was to add time-varying thermal habitat affects, and growth to the catch-at-length model. We will continue to work with the group at the University of Maine and our Stock Assessment Subcommittee to develop the model further.

Scrolling down to ecosystem-based management and changing ocean conditions, we'll highlight a task from the Executive Committee to develop criteria for adding or subtracting states for fishery management boards if and when an individual stock's distribution changes. This is something that the Management and Science Committee will take up.

Then finally, under competing ocean uses, we added as task to explore opportunities to characterize the geographic extent of fisheries using trackers as a tool. I will stop there. Those are the highlights for our fisheries science program.

CHAIR KELIHER: Thanks, Pat, does anybody have any questions for Pat? John Clark.

MR. JOHN CLARK: I just want to get back to one of the first comments you made about incorporating the socioeconomic data into assessments. When might we start seeing that? I mean a good example just the other day was the menhaden vote for the issue about changing the TAC there.

We heard a big concern from the Advisory Panel about the economic impacts of lowering the TAC, yet during the material I saw and during the conversation, we didn't have anything concrete about that, as to what lowering the TAC levels would do to the economics of our fishing public here. Just curious as to when we might start seeing more input into these documents from the Economic and Social Sciences Committee.

MR. CAMPFIELD: It's really a multi-pronged approach. The first is through the members of the CESS, the Committee on Economics and

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Social Sciences. Our coordinator, Sarah Murray has done an excellent job of getting the various Committee members assigned to different species. They have had a longstanding goal to participate in PDT meetings, some TC meetings where there are management regulations discussions with socioeconomic aspects.

That is one of the most direct ways to have the socioeconomic experts involved in this Committee and team discussions to provide input and advice. I guess the second aspect is the Risk and Uncertainty Policy that has been in development, and we hope to finalize soon, as was raised earlier this week.

But again, Sarah and the CESS Committee have been working pretty hard on developing criteria and scoring ranges for socioeconomic questions and elements of that Risk and Uncertainty Policy. The intent is to have that be a more formal type of input on socioeconomic information for your decision making. The third piece is that the FMPs have had socioeconomic information, but we can probably do a better job of rounding that out.

Often, we're limited by the socioeconomic data that are available coastwide. We've worked closely in the ACCSP to make use of what they have in their databases, but we often run into the hurdle of that type of data being fairly limited. But we are spending a fair amount of time on it through the CESS Committee the last couple of years.

MR. CLARK: Thanks, Pat, but menhaden in particular, to me this was a pretty glaring example where the science that we're using for the single species is excellent for the assessment there. But, here I would say it was more speculative and yet we didn't have any. There could have been, to me, pretty simply done what the cost might be.

You know even just a ballpark range as to what we would be looking at for our, for example our fisheries that use menhaden for bait. What

reducing the TAC to a certain level, how it might impact that. I mean, it doesn't seem like it would be that difficult. If we can manage this species now, and set a TAC based on some fairly speculative science. It seems like we could have some kind of numbers there.

CHAIR KELIHER: Great, thanks, John. Jason McNamee.

DR. JASON McNAMEE: Pat, thanks for the presentation, Pat. The very last thing you brought up. I was just wondering if you could give a little more detail on that. I hadn't heard about at least the tracker one. Just curious as to what that is.

MR. CAMPFIELD: Sure, I think there are a couple of purposes, and Toni alluded to it under Goal 1, and perhaps our Chairman can speak to it too. It was a task that was raised during the initial review of the action plan through the Administrative Oversight Committee. But my understanding is it relates to understanding where lobster fishing is taking place, as it may relate to offshore wind development, and perhaps for other purposes. But that's as much as I can say about it.

DR. McNAMEE: Okay, thanks.

MS. KERNS: I was just going to say, the Board came up with a more specific task and workgroup at the meeting, and so that is why I brought it up under lobster before. Here we were sort of thinking, trying to think towards the future of trackers, and how they could improve in a more timely fashion information related to fisheries that we don't have good data for, Jay.

DR. McNAMEE: Trackers on boats is what they're talking about, I got you, thanks.

MS. KERNS: Yes.

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CHAIR KELIHER: Yes, great. Any other questions for Pat? Seeing no hands, why don't we go on to the next presenter?

ACCSP

MR. GEOFF WHITE: Thank you, Pat, this is Geoff White covering Goal 3 for ACCSP. The top parts are about the same. The sold item on a continuing basis that we've highlighted there is we've moved it from last year FISMA is the Internet Security Act. We moved it from its own item to moving up to some ongoing activity. Really this is a significant ongoing staff time and cost for software tools, and annual external reviews of our security status. Part of having our FISMA authority connects the six different federal systems that we work with. That is why it's moved up into our continuing items. Under Program Management, these are some updated items here that are not vastly different of things that you've heard before, immigrating with the Commission's communications plan, of course selecting and monitoring that ranked proposal project.

The uptick to the Atlantic recreational implementation plan is really on about a five-year cycle. We're four years in at the moment, and this is to include coastal priorities for projects and direction. It is then used by APAIS in input by the states and the Councils and used by MRIP to address their kind of long-term activities and funding privacy. That is a big item for us, the Rec Tech group and ACCSP (broke up).

Really, we'll continue our support for partner implementation of the tools that we have out there. The middle sector here is really changing the focus from the redesign, prioritizing not as much on the trip aspects of the dealer landings reporting. That is moving the SAFIS management system, the switchboard is a tool that we use to make that more flexible, and updating the end use for tools to be able to have some really visible components of what the SAFIS redesign of the database and props

and samplings are doing for the end users in those flexibility tools.

Electronic dealer reporting will be our focus for improving those tools next year, and also some of the items below support that in terms of the participant and permit data base design, and the trip management system, having a unique by dealers, it's shared and coordinates things such as the actual trip reports, the dealer report, potentially there will be biological information as well.

The title of this one did change, we added the word standards in here, along with distribution and use. In the data warehouse there is continued focus to incorporate these data elements, redesign the user interface there, improve the content on biological data, and recreational estimates. That means better align tools with what MRIP is showing on their website, as well as finding ways to support our partners in the presentation of those data fields.

Under recreational fisheries, the big points there are really to begin evaluating the utility and standards for private angler solitary mobile applications. That is a very wordy bullet item, but focuses on finding out where those private angler apps are best utilized for their data, and what are the common data fields that could be recommended.

That's defining the appropriate uses to guide stakeholder expectations, so are these apps going to provide supplementary information? How might it be used relative to MRIP relative to the assessment process relative to other processes? That is really trying to capture the best guidance there, is what the bullet is about.

Of course, that involves developing the core fields for data collection, the things that would be consistent and useful across the source application. The last item under recreational fisheries is really to continue an ongoing path, which was the ability to more fully incorporate

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for-hire logbooks into the catch statistics. With the additional federal for-hire logbook and HMS regulations, sorry not regulations, important incorporation of some of these tools. How does that factor in to the way the for-hire estimates are being created? That is a methodology that is really part of the implementation plan, it's also part of something that Rec-Tech is developing. With that I will stop, and ask for any questions.

CHAIR KELIHER: Thank you, Geoff, any questions for Geoff? Seeing none, I think you're off the hook, Geoff, so we can move on to Goal 4.

LAW ENFORCEMENT

MS. KERNS: Goal 4 is the Commission's Law Enforcement Committee goal. You'll see that we don't have any folded tasks really for the Law Enforcement Committee. Most of the work that they do is looking at our FMPs and new management measures to those FMPs, and revealing and providing input to the Board on enforcement for those measures.

While those are new every, well we are proposing plans every year, the specifics are unknown until it comes up. We'll continue on with that, and note that the Law Enforcement Committee will continue to engage with the Lobster Board on offshore enforcement activities, as well as engage with real enforcement activities. That's all I've got.

CHAIR KELIHER: Any questions on that goal? Seeing no hands, we'll move on to Goal 5.

HABITAT AND ATLANTIC COASTAL FISH HABITAT PARTNERSHIP

MR. CAMPFIELD: Goal 5 covers all the activities for our habitat program, and the Atlantic Coastal Fish Habitat Partnership. Just a couple of highlights for 2021. Under the integrate category to complete the fish habitats of concern descriptions to be considered for

integration into the Commission's fishery management plans.

Secondly, under ACFHP, there have been a number of projects since the partnership started over a decade ago, and we want to collect information on the long-term success of ACFHPs on the ground conservation projects, to understand improvements to habitat after the projects are completed. That's all under Goal 5.

CHAIR KELIHER: Great, thank you, Pat, any questions on Goal 5? Seeing no hands, we'll move on to the next goal.

STAKEHOLDER AND PUBLIC SUPPORT

MS. TINA L. BERGER: Thanks, Pat, this goal is regarding stakeholder and public support for the Commission, under increasing public understanding support. We are going to be building upon our Fisheries Management 101 webpage, if you all haven't seen it, be sure to check it out under our Fisheries Management Program page.

We'll be turning that into a primer for folks to use and distribute to their stakeholders as needed. We are going to look at a couple of different ways of highlighting our current status of the stocks. We currently have the stock status package, but we'll see if we can refine that a bit more. On our plate as well is to update the Guide to Fisheries Science and Stock Assessments.

That was first developed in 2009, and it's pretty dated in some areas, so we're going to work on bringing that up to speed. For 2021 we identified a couple of issues that we are going to focus increased outreach on, and these include development of the Striped Bass Amendment, implementation of the circle hooks requirement as part of that amendment, or as part of Addendum VI, as well as continue to work on outreach on the use of ERPs. Regarding stock assessments upcoming for 2021, we will put together some outreach materials on the upcoming horseshoe crab ARM

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benchmark assessment, and will do as time allows, do updates and overviews for management track assessments for striped bass, bluefish, black sea bass, and summer flounder.

Under new technologies, we're going to do some upgrading and updating of our website, make it HTTPS compliant, find ways to increase accessibility and user friendliness, and add new pages for ERPs as well as climate change effects on managed species. We're going to continue to focus on using webinars, videos, and story maps to engage and inform the public about current activities for all our programs.

Under media relations and networking, I have been working on an implementation, I've been working on a communications plan to fully integrate all our departments and coordinate outreach activities. Part of that plan will be to develop a baseline, so we will be conducting a survey of all our products and tools, and to get a sense of how effective they are, and where we can make further progress in the future.

The only last thing is we do coordinate this Atlantic Coast Fisheries Communication Group, which is outreach folks from all the states and the Councils and the federal agencies we work with. We hope to have a meeting in 2021 to talk about some shared communications issues, and how we can move forward on joint messaging. That's it for Goal 6.

CHAIR KELIHER: Thank you, Tina, any questions for Tina? John Clark.

MR. CLARK: Thank you, Tina. The Management 101 webpage is really nice. I just was curious as to whether ASMFC has worked with MRIP at all about getting the public to understand the new MRIP better, because there is a ton of dissatisfaction among anglers with the recreational data that is coming in.

You know obviously the new MRIP is supposed to be an improvement, but because of the

impact it's had on several assessments, I think there is a lot of distrust of it in the angling public, and a lot of it comes out of hearings how little people think of MRIP. I'm just curious as to whether you had any plans to explain that data on the ASMFC website.

MS. BERGER: It is in part captured under Goal 1, in terms of increasing awareness on cross-cutting issues regarding MRIP. I know the Mid-Atlantic Council has developed an MRIP page. We haven't discussed it at the staff level, although both Geoff and I and Toni and Bob were all involved in MRIP communications at some level. But that is certainly something we could discuss, and potentially address, if that is the desire of the Board or the Business Session.

CHAIR KELIHER: John, does that answer your question?

MR. CLARK: That's fine. Like I said, I was just curious, and you know as I said, I just think the more avenues to get the information out to the public, hopefully the better understanding and eventual acceptance of it. Like I said, as of right now there is a lot of distrust of that data.

CHAIR KELIHER: Yes, I think those type of conversations is certainly going to play out over time with several species' management boards, but I appreciate that question. Tom Fote.

MR. FOTE: We offered virtual meetings for the last eight months, nine months, and we should basically look at how we could use this tool to better interact with the public. Maybe have like a Commission open house one day, where we have different presentations on different species, and we share things about the species, and have people ask questions and things like that.

Usually when we basically reach out to the public, rather than have a public hearing we're going to have this. Maybe we should have an open house to get acquainted, in a more-

friendlier atmosphere when we're not cutting back quota or doing something else.

CHAIR KELIHER: Thanks, Tom. John, your hand is still up. Do you have a comment, or is that an old hand? Nope, must have been an old hand. Any other questions for Tina? Seeing none, let's move on to Goal 7.

LEGISLATIVE

EXECUTIVE DIRECTOR BEAL: I'll take that one. Goal 7 is our legislative activities, and it's really most of it is the ongoing activities that Deke and I engage in, you know working with Congressional offices and working with a number of you guys to bring you up to Capitol Hill, and a lot of you do it independently, interacting with your Congressional offices.

There are a couple bullet items, if you scroll down a teeny bit, Maya. The first one is that there is an election coming up, apparently, and we're going to react to that. No one knows the outcome of the election, but we'll see who we need to react to and who we need to start interacting with after that election.

The Legislative Committee has been revamped, and is up and running and doing well this year, and we've got a number of activities there that that group is contemplating working on. The idea is to continue their momentum into 2021. One of the big items that is being talked about is when should we seek reauthorization of the Atlantic Striped Bass Act and Atlantic Coastal Act?

I don't think anyone, I haven't heard of any significant changes that anybody wants to those Acts but they haven't been reauthorized for a while, and the authorization level could be increased, and I think that would benefit the states as we try to seek more funds to support Commission activities. We also want to seek federal appropriations for a number of surveys that are important to the member states in the Commission, as well as the horseshoe crab activities.

Those are the highlights of our legislative activities, and we'll continue to monitor bills and special legislation on Capitol Hill, and share all that information with you. If any one of you want to go up to Capitol Hill, or interact with your state delegations, let us know and we're happy to do that. Happy to answer any questions, Pat.

CHAIR KELIHER: Great, Bob, thanks for that. Tom Fote.

MR. FOTE: After the last Congressional election I asked Bob Beal and Congressman (broke up) to host (broke up) because we had a lot of new delegation. We had, I think it was five members of the New Jersey Congressional delegation. David asked Congressman Small, because the Congress Committee had a big office that could host a whole delegation with resights, Bob Beal, and a few other people on fisheries and how it went. I don't know how Bob felt.

But I thought it was important, that this is how you reach out to the whole delegation like from New Jersey, and we do this with other states. I mean once you figure out the Congressional (broke up) and your state that can basically help somebody like this, and bring all those delegations to at least inform, not just the one person or two persons of fisheries, but all the delegation that you can fit in a room.

CHAIR KELIHER: Thank you, Tom. Ritchie White.

MR. G. RITCHIE WHITE: If the Commission makes the decision that the Commission is in good shape financially, separate from the surveys that need funding. I think that that, and I don't know if that would be something that there would be a decision made for that. My thinking is, when we go to the delegations, we almost always go asking for money.

It would be great to go and say the Commission is okay for now. You know outside the individual issues, surveys that we need money

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for. Anyway, that is my sense. I don't know if there is a decision made that we are in that situation, and if so then I think that is a message we should put forward.

CHAIR KELIHER: I think as we get into late fall early winter, we'll certainly be having more conversations about appropriations, that Council and Commission line has been one that I think all of our individual states have focused on, as far as continuing to support. It certainly helps when you say, we're in pretty good shape on this line.

But we're obviously going to have more areas we're going to have to refocus on, especially considering all of the impacts to the individual state budgets. I think your point is well taken. Any other questions on this topic? Not seeing any other hands, Bob, are there any more goals? Do we have one more to go?

EXECUTIVE DIRECTOR BEAL: Yes, one more, the Finance Administration. Laura's got it.

CHAIR KELIHER: Laura, you're up.

FINANCE ADMINISTRATION

MS. LAURA C. LEACH: Thank you very much, Mr. Chairman. I will try to make up time, because basically a majority of the goals are tasked under Goal 8 are ongoing, making sure the Commission is run well, runs smoothly. That involves our grants and budgets and all that. The one area that we did put a lot of new tasks in this year was due to the pandemic, and what we're learning from the whole teleworking situation, and where we need to bolster our ability to do that.

I'm not going to read through all of these, because I think you all can read them very well. The thing that I would point out under Human Resources is that I'm going to work on pursuing hiring a Finance Administration Deputy Director next year. I think that the rest of the tasks are pretty clearly outlined. May I answer any questions?

CHAIR KELIHER: Any questions for Laura? Seeing no hands going up, I think the fact that Ritchie brought up the issues around finance and that the Commission continues to be doing very well financially remains a direct link back to you, Laura, and the work that you're doing with your team. It certainly probably reflects the fact that we're not getting a lot of questions. With that I'm going to turn it back over to Toni. This is a final action item, so we will need a **motion to approve the 2021 Action Plan**. Maybe I should be turning it back over to Bob.

EXECUTIVE DIRECTOR BEAL: I think, Pat, if anyone is willing to make that motion, we can get it up, and then the group can vote.

CHAIR KELIHER: Bill Anderson, are you making a motion?

MR. BILL ANDERSON: I am, Mr. Chairman, thank you.

CHAIR KELIHER: I also got a second from Tom Fote.

MR. FOTE: Yes.

CHAIR KELIHER: We'll let them get it on the screen for everybody. The motion is pretty self-evident here. Is there any discussion on the motion?

MS. KERNS: Pat, I just want to let Maya know that the motion was by Bill Anderson and seconded by Tom Fote.

CHAIR KELIHER: Seeing no hands going up, is there any objections to the motion? Hearing no objection, the motion passes. Thank you very much.

ELECTION OF CHAIR AND VICE-CHAIR

CHAIR KELIHER: The Item Number 5 is the Election of a Chair and a Vice-Chair. I'll turn it over to Bob Beal.

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EXECUTIVE DIRECTOR BEAL: Just a quick reminder. Each year the Commission elects a Chair and Vice-Chair from its member ranks. However, our tradition has been to have Chairs and Vice-Chairs serve two-year terms. We're at the end of the first year for Mr. Keliher as Chair and Mr. Woodward as Vice-Chair, but we do need to go through the election process to verify their second year. There is a Nominations Committee, and Jim Gilmore is the Chair of that Committee, so I will go ahead and call on Jim for nominations for the Chair of the Commission, please.

MR. JAMES J. GILMORE: Just for everyone, the Nomination Committee considered myself, Cheri Patterson, and Jim Estes. Our normal process actually has been to reach out to you the last couple of weeks to see if there were additional nominations. However, I was out of commission the last couple of weeks, so that didn't happen, completely my fault.

But we do want to have an opportunity to see if there are any nominations from the floor. My only comment on my last two weeks is if you haven't gotten the shingles vaccine, do it on the way home today. First essentially, we have good news in that both Pat and Spud are both willing to continue on, so their names are up for nomination. I was thinking, Bob, that we would take these one at a time. I'll offer to the floor anyone who would like to make a nomination for Chairman for the upcoming year. If you want to make a nomination, please raise your hand, and Bob I think can inspect to see if there are any hands raised.

EXECUTIVE DIRECTOR BEAL: Actually, Toni, are there any hands up?

MS. KERNS: No one has their hand up.

EXECUTIVE DIRECTOR BEAL: Okay, so Jim, it sounds like there is no additional nominations, so do you want to go ahead and nominate Mr. Keliher for reelection for a second year?

MR. GILMORE: Yes, on behalf of the Nominating Committee, I nominate Pat Keliher as Chair of the ASMFC, effective at the end of the Annual Meeting.

EXECUTIVE DIRECTOR BEAL: Thank you, Jim, and since that is on behalf of the Committee there is no need for a second. We'll try to do this the efficient way. Are there any objections to having Mr. Keliher serve a second year as Chair of the ASMFC?

MS. KERNS: No hands are raised.

EXECUTIVE DIRECTOR BEAL: No hands. Well, congratulations, Pat! It appears you have been unanimously elected as Chair for a second year.

CHAIR KELIHER: Thank you very much everybody, appreciate that.

EXECUTIVE DIRECTOR BEAL: Jim, do you want to follow up to see if there are any other nominations for Vice-Chair, or if not nominate Mr. Woodward for a second term?

MR. GILMORE: Yes, so back to the Board. Are there any additional nominations beyond Spud for Vice-Chairman of the ASMFC for the upcoming year, please raise your hand and let Toni know?

MS. KERNS: I see no additional hands raised, Jim.

MR. GILMORE: Okay then, on behalf of the Nominating Committee, I nominate Spud Woodward as Vice-Chair of the ASMFC, effective at the end of the Annual Meeting.

EXECUTIVE DIRECTOR BEAL: Excellent, thank you, and again, it's a motion on behalf of a Committee, therefore no need for a second, and we'll try the same voting technique. Are there any objections to having Mr. Woodward serve as the Vice-Chair for a second year?

MS. KERNS: I see no hands raised.

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Draft Proceedings of the Business Session
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EXECUTIVE DIRECTOR BEAL: Excellent, thank you, Toni. **Again, by unanimous vote or unanimous consent, Spud, you are the Vice-Chair for a second term.** It's been really great working with Pat and Spud. There are no two greater leadership guys to go through a pandemic with than both these guys, so thank you for everything. Jim, I hope your shingles, I hope you continue to recover from those. It sounds like it's been a rough grind for you for the last couple weeks. Hang in there, we hope you get better. With that, Mr. Chairman, I think it's all yours.

MR. GILMORE: Well, thank you, Bob.

CHAIR KELIHER: I want to thank everybody again for the vote of confidence for Spud and I. We may have secretly been wishing for a coup, it has been quite a year with the pandemic. Frankly, I think the fact that we're getting together, at least from the Administrative Commissioners perspective, nearly weekly.

It allows us all to kind of have these broader conversations, and help get through this together. Again, I appreciate the vote of support. Let's finalize the Business Session here. Is there any other, I'm sorry, Tom Fote's hand just went up. Tom.

MR. FOTE: Yes, I sent an e-mail to you and Bob. I just wanted to mention that this Sunday we lost one of our past Commissioners. Some of you will remember, it was George Harris, Director of Fish and Wildlife for the state of New Jersey. He basically worked for the Agency for 40 years. George was one of my mentors when I first got involved, as a matter of fact.

One of the reasons I'm here is because he talked me into doing a lot of these jobs. He also pointed out the fact that we need to work with other groups, like in New Jersey the hunters and the fishermen all needed to work together. When he retired at 65, he did not quit. He actually would become president of the Federation and brought all these groups

together, the New Jersey State Federation of Sportsmen Club and reorganized it.

If you look at deer management and how it's being done nowadays, it was really up to George, because when George was appointed and got involved with managing deer he basically allowed for a doe hunt, back before in the ancient times, you didn't shoot female deer. He changed that in New Jersey, and before he was finished it was all over the country.

He also trained the other directors that you've known from New Jersey, Bob Labelle, Dave Chanda, Matty LaFleur. He's got a long legacy of people he's trained in the Division, and some are still around. I just figured I would let you know, as I said he was one of my mentors also back then.

CHAIR KELIHER: Thank you, Tom, for that. I think we're all following the footsteps of a lot of different people, and many of them before us certainly created some big shoes to fill. Thanks for bringing that forward.

MR. FOTE: One more point, Pat. He was also part of the greatest generation, and it was interesting, because (breaking up) those directors that are going on back there. A lot of them from the federal agencies like Dick ? and Dick ? and ? (broke up) They all served in World War II. George was a marine, right in the beaches in the South Pacific. Pete Mahoney is the other Vice-Chairman of New Jersey; he was a bomber pilot over in England. They learned how to work together, and they kept at it when they basically became directors (broke up). I'll try to get past all the differences and our arguments, and I took direction from him when I was younger.

CHAIR KELIHER: Thanks for that, Tom. We're going to move on. Is there any other business to be brought before the full Commission? I'm not seeing any hands go up. We were to go into recess, and then consider noncompliance

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findings after the Policy Board, but seeing there are thankfully no noncompliance findings.

ADJOURNMENT

CHAIR KELIHER: I think a motion to adjourn would be a good thing to hear right now, and then we can move back on to the Policy Board. Doug Haymans, motion to adjourn. Is there a second? Second by Cheri. Any objections to adjourning? Seeing no hands, thank you very much, I appreciate everybody.

(Whereupon the meeting adjourned on October 22, 2020 at 10:57 a.m.)