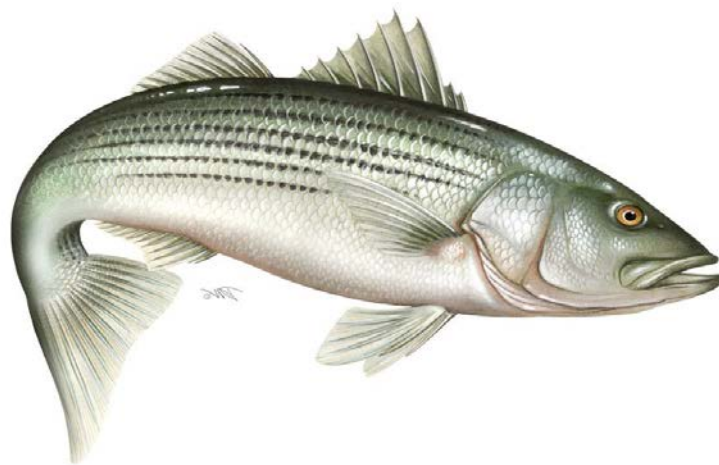




Atlantic Striped Bass Draft Addendum V



Atlantic Striped Bass Board
May 9, 2017

Timeline



- May 2017: Consider Approval of Draft Addendum V for Public Comment
- May – July 2017: Public Comment period
- August 2017: Board Reviews Public Comment
 - Final approval of options and Addendum



Draft Addendum V Outline



- Statement of the Problem
- Management History
- Status of the Stock
- Status of the Fishery
- Performance of Addendum IV
- Management Options
- Compliance Schedule



2.1 Statement of the Problem



- Draft Addendum V was initiated to consider a relaxation of the coastwide commercial and recreational regulations to bring fishing mortality (F) to the target-level based on the 2016 stock assessment update
 - Concerns raised by CBay jurisdictions regarding continued economic hardship endured by its stakeholders since Add IV
 - 2016 stock assessment update indicating that F in 2015 is below the target



2.2.1 Management History



- Since Amendment 4 (1990), the foundation of the FMP has been to maintain F at or below a F target
- Amendment 6 (2003) and Addenda I-IV,
 - New fishery regulations
 - Modified F reference points, C_{Bay} and coast
 - New set biological reference points (BRPs) based on the 1995 estimate of female SSB
 - Management triggers based on the those BRPs (i.e., F and SSB targets and thresholds)

2.2.1 Management History, cont.



- Addendum IV implemented prior to 2015
 - One set of F reference points for all areas
 - Required a reduction in removals to reduce F to a level at or below the target
- To achieve this, fisheries implemented regulations to reduce removals by:
 - 25% along the coast relative to 2013
 - 20.5% in the Chesapeake Bay relative to 2012



2.2.1 Management History, cont.



Addendum IV regulations:

Fishery	Region	Regulation
Commercial	Coast	Amendment 6 quota reduced by 25%
	Chesapeake Bay	Quota = 2012 harvest reduced by 20.5%
Recreational	Coast	1 fish @ 28" min
	Chesapeake Bay	2 fish @ 20-28" OR 1 @ 20-28" AND 1 >28"

2.2.2 Stock Status

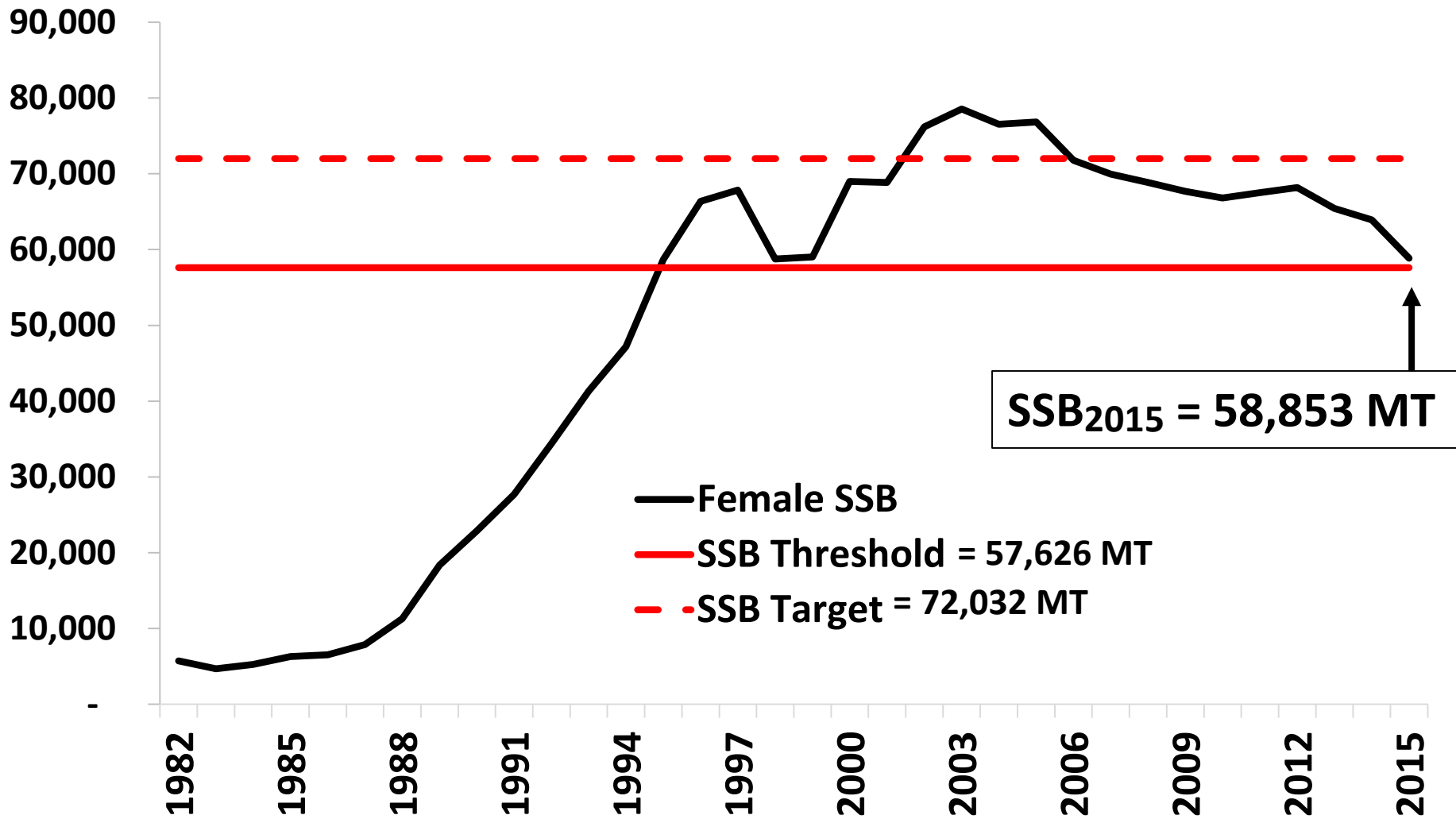


Figure 1. Female spawning stock biomass (SSB) relative to the SSB reference points, 1982-2015. Source: 2016 assessment update



2.2.2 Stock Status, cont.

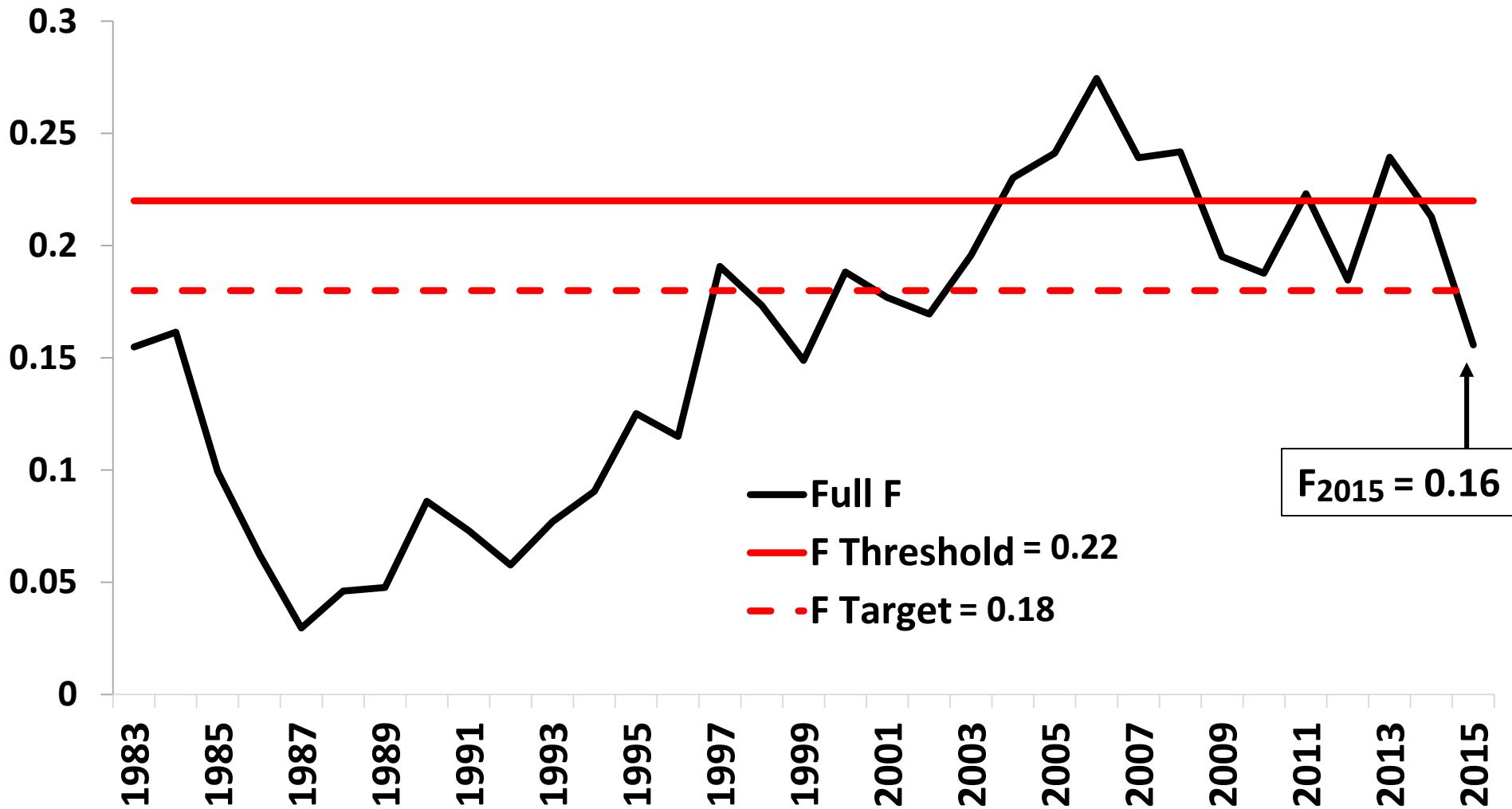


Figure 2. Fishing mortality (F) relative to the F reference points, 1983-2015. Source: ASMFC 2016a.



2.2.3 Fishery Status: Commercial



- From 2003-2014 (Amd 6), commercial harvest has varied little from year to year
 - 2.4 to 3.1 million pounds from coastal fisheries
 - 3.3 to 4.4 million pounds from the CBay
- In 2015, following implementation of Add IV:
 - 1.9 million pounds from coastal fisheries
 - 2.9 million pounds from the CBay



2.2.3 Fishery Status: Commercial



- Commercial dead discards continue to be a source of uncertainty in stock assessment
 - Estimates vary considerably from year to year
 - In 2015, estimated at 299,566 fish; 68% decrease from 2014 (931,391 fish)
- Coastal commercial fishery regularly underachieves its quota by 20% annually
 - 9% of quota held by states where striped bass is under game fish status (ME, NH, CT and NJ)
 - Minimal harvest from NC ocean fishery in recent years

2.2.3 Fishery Status: Recreational



- From 2003-2014 (Amd 6), recreational harvest has been variable, but trending down in recent years
 - 16.7 to 26.6 million pounds from coastal fisheries with 77% coming from MA, NY, NJ
 - 2.5 to 6.4 million pounds from the CBay
- In 2015, following implementation of Add IV:
 - 13.3 million pounds from coastal fisheries
 - 3.5 million pounds from the CBay



2.2.3 Fishery Status: Recreational



- From 2003 to 2008, recreational releases averaged 17.0 million fish (1.5 million dead discards)
- From 2009 to 2015, the number of fish released has been much lower, averaging 7.1 million fish (637,370 dead discards)
 - Reduced biomass/abundance
 - Reduced availability of fish in nearshore waters
 - Changes in angler behavior



2.2.4 Performance of Addendum IV



- TC predicted a 25% reduction overall
 - In 2015, observed harvest was close to that predicted on a coastwide-scale
 - However, observed harvest from rec fisheries in the CBay (+58%) and along the coast (-47%) diverged significantly from the predicted values
 - Changes in (1) effort, (2) size and age structure of the pop, (3) and the distribution of the 2011 year class in the CBay and along the coast were the most significant variables contributing to the differences



2.2.4 Performance of Addendum IV



- 2011 YC was the largest recruitment event since 2004, and in 2015 was nearly fully available to the Cbay recreational fisheries
 - Only partially available to ocean fisheries
- Due to the age at first migration, anticipated to become increasingly available to coastal fisheries in the coming years
 - And of harvestable size (i.e., 28" or greater)



3.0 Management Options



- How many fish would it take to increase F from 0.16 (2015) to 0.18 (target) in 2017?
- Constant F projection
 - $F_{2015} = 0.16$ (3,017,230 fish)
 - F_{Target} (0.18) in 2017 = 3.3 million fish, 10% increase from 2015
 - Proposed measures aim to increase total removals (com + rec + dd) by 10% (327,000 fish) relative to the 2015 estimate



3.0 Management Options



- Proposed management options were developed using 2015 catch data
- PDT focused on applying relatively equal increases to both the recreational and commercial fisheries
- Does not propose changes to:
 - Commercial size limits or quota transfer provision
 - North Carolina's FMP for the Albemarle Sound and Roanoke River



3.1 Proposed Recreational Options



Option A – Status Quo

- Coastal Recreational Fishery
 - One fish bag limit and 28 inch minimum size, and approved conservation equivalency programs
- Chesapeake Bay Recreational Fishery
 - Jurisdictions to implement a program (reviewed by the TC and approved by the Board) that achieves a 20.5% reduction from 2012 harvest (including dead discards)
- Potential to increase removals by >10%
 - Final 2016 Removals = 2,561,339 fish (+22%)
 - Difference of 461,245 fish > 327,000 fish (+10%)



3.1 Proposed Recreational Options



Option B: relax recreational fishery regulations

- Coastal Recreational Fishery

Option	Bag Limit*	Size Limit*	Season*	Diff From 2015 Removals	Estimated Total Removals
B1	1	27" min	<i>(Appendix 1)</i>	+12%	1,360,566 fish
B2	Submit a program that achieves a 10% increase from 2015 removals (including estimated dead discards) for TC review and Board approval				

- One inch decrease in the current minimum size limit
- *Developed based on 2015 state-specific measures, including conservation equivalency programs



3.1 Proposed Recreational Options



Option B: relax recreational fishery regulations

- Chesapeake Bay Recreational Fishery

Option	Bag Limit	Size Limit*	Season	Diff From 2015 Removals	Estimated Total Removals
B3	2	19-28"	Sept 1 - Oct 31	+9%	881,885 fish
B4	2	19-28"	May 16 - Aug 31	+9%	884,695 fish
B5	Submit a program that achieves a 10% increase from 2015 removals (including estimated dead discards) for TC review and Board approval				

- *One fish can be greater than 28"
- One inch decrease, applies to the specific dates listed
- Developed based on 2015 state-specific measures, including conservation equivalency programs



3.2 Proposed Commercial Options



Option A: Status Quo

- Coastal Commercial fishery
 - Maintains the Addendum IV quota and state-specific allocations (25% reduction from Amd 6 quota)
- Chesapeake Bay Commercial Fishery
 - Maintains Addendum IV quota of 3,120,247 pounds (20.5% reduction from 2012 harvest)



3.2 Proposed Commercial Options



Option B: 10% increase to Addendum IV Quota

- Coastal Commercial fishery
 - The coastal quota will be 3,140,180 pounds and will be allocated via the state-specific quota allocation percentages in Amd 6 and Add IV
- Chesapeake Bay Commercial Fishery
 - The CBay quota will be 3,432,272 pounds.



	FOR REFERENCE	OPTION A Status Quo	OPTION B
	2015 Harvest	Add IV Quota	10% Increase to Add IV
CBay Total	2,942,522	3,120,247	3,432,272
Coastal Total	1,886,522	2,854,709	3,140,180
State-Specific Coastal Commercial Quota Allocations			
Maine*	-	188	207
New Hampshire*	-	4,313	4,744
Massachusetts	865,753	869,813	956,794
Rhode Island	188,475	182,719	200,991
Connecticut**	-	17,813	19,594
New York	515,459	795,795	875,375
New Jersey**	-	241,313	265,444
Delaware	144,068	145,085	159,594
Maryland	34,626	98,670	108,537
Virginia	138,141	138,640	152,504
North Carolina	0	360,360	396,396
Total Estimated Harvest⁺	4,829,044	5,350,969 (5,711,329)	5,886,067 (6,282,464)
% Diff From 2015 Harvest⁺	0%	+11% (+18%)	+22% (+30%)

4.0 Compliance Schedule



- If approved, states must implement Addendum V according to the following schedule to be in compliance with the Atlantic Striped Bass ISFMP:
- XXXX: States submit implementation plans
- XXXX: Board review and approval
- XXXX: States implement regulations



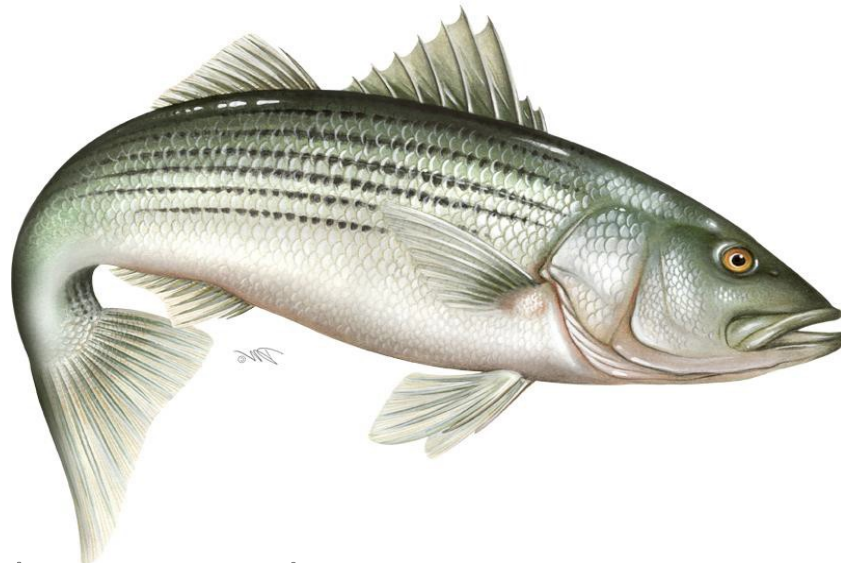


Questions??





Technical Committee Comments on Proposed Options in Draft Addendum V



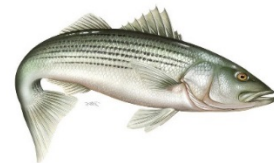
Atlantic Striped Bass Management Board

May 9, 2017

Overview



- TC populations projections
- Preliminary 2016 removals
- Discard data
- 2011 year class
- Angler behavior
- Performance of Addendum IV



TC Comments



- TC Population Projections:
 - A ~10% increase in removals from 2015 levels would increase F to the target (0.18) in 2017.
 - However, management options adopted by the board through Draft Addendum V will most likely not be implemented until late 2017, early 2018.



TC Comments



- Preliminary 2016 Removals:
 - The 2016 stock assessment update and TC population projections used data through 2015.
 - Preliminary 2016 removals are estimated to be ~18% greater than 2015 removals under Addendum IV regulations with no additional changes.



TC Comments



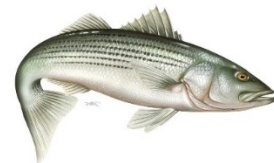
- Discard Data:
 - The American Littoral Society (ALS) fish tagging program and the Marine Recreational Information Program (MRIP).
 - Variable year to year regarding # of fish tagged and level of sampling.
 - Recent changes in MRIP methodology.



TC Comments



- 2011 Year Class:
 - Strong presence in CB in recent years.
 - Larger proportion expected to migrate to the coastal fishery in 2017.
 - Will result in changes in catch, harvest, and dead discards on coast and in CB which are not accounted for in Draft Addendum V.



TC Comments



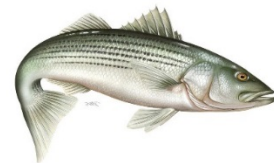
- Angler Behavior:
 - Can be quite variable from year to year and with changing regulations.
 - Cannot be accounted for and therefore was not considered in Draft Addendum V.



TC Comments



- Performance of Addendum IV:
 - On coastwide scale, 2015 harvest estimate very close to predicted harvest.
 - For recreational fishery on coast and in CB, harvest estimates differed significantly from predicted.



TC Comments



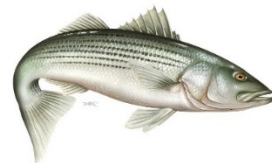
- Recreational fisheries in the ocean saw a greater reduction than predicted.
- Recreational fisheries in the CB experienced an increase in harvest relative to the reference period.



TC Comments



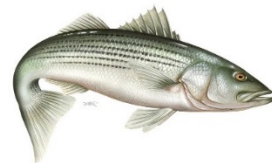
- The most significant variables found to contribute to these large differences were:
 - changes in effort
 - changes in the size, age structure, and distribution of the 2011 year class along the coast relative to the CB



TC Comments



- Proposed options in Draft Addendum V make similar assumptions to those used in developing Addendum IV.
- Estimated increases could be significantly under or over predicting harvest.



???'s





Striped Bass Benchmark Stock Assessment TORs

ASMFC Spring Meeting

May 9, 2017

Benchmark Assessment Timeline



Data Workshop planning call/webinar	✓
Board approval of TORs	May 2017
Initial data submission through 2016	June 15, 2017
Data Workshop	August 2017
Assessment/Modeling Workshop I	Nov/ Dec 2017
Assessment/Modeling Workshop II	July 2018
Assessment Report due to peer-review panel	Mid Nov. 2018
Peer Review Workshop	Early Dec 2018
Board Review	February 2019

Benchmark Assessment Timeline



Data Workshop planning call/webinar	✓
Board approval of TORs	May 2017
Initial data submission through 2016	June 15, 2017
Data Workshop	August 2017
Assessment/Modeling Workshop I	Nov/ Dec 2017
Assessment/Modeling Workshop II	July 2018
Assessment Report due to peer-review panel	Mid Nov. 2018
Peer Review Workshop	Early Dec 2018
Board Review	February 2019

TORs



- Terms of Reference (TORs) for the 2018 Striped Bass Stock Assessment
- ASMFC External Peer Review process
 - 2 sets of TORs: 1 for SASC, 1 for reviewers

SASC TOR 1 & 2: Data



TOR 1: Investigate all fisheries independent and dependent data sets, including life history, indices of abundance, and tagging data. Discuss strengths and weaknesses of the data sources.

TOR 2: Estimate commercial and recreational landings and discards. Characterize the uncertainty in the data and spatial distribution of the fisheries. Review **new MRIP estimates** of catch, effort and the **calibration method** if available.

SASC TOR 3: SCAA Model



TOR 3: Use an age-based model to estimate annual fishing mortality, recruitment, total abundance and stock biomass (total and spawning stock) for the time series and estimate their uncertainty. Provide retrospective analysis of the model results and historical retrospective. Provide estimates of exploitation by **stock component and sex**, where possible, and for total stock complex.

SASC TOR 4: Tagging Model



TOR 4: Use tagging data to estimate mortality and abundance, and provide suggestions for further development.

SASC TOR 5 & 6: BRPs + TACs



TOR 5: Update or **redefine** biological reference points (BRPs; point estimates or proxies for B_{MSY} , SSB_{MSY} , F_{MSY} , MSY). Define stock status based on BRPs by **stock component** where possible.

TOR 6: Provide annual projections of catch and biomass under alternative harvest scenarios.

Projections should estimate and report annual probabilities of exceeding threshold BRPs for F and probabilities of falling below threshold BRPs for biomass.

SASC TOR 7: Future Work



TOR 7: Review and evaluate the status of the Technical Committee research recommendations listed in the most recent SARC report. Identify new research recommendations. Recommend timing and frequency of future assessment updates and benchmark assessments.

Review TOR 1 & 2: Data



TOR 1: Evaluate the thoroughness of all fisheries independent and dependent data sets, including life history, indices of abundance, and tagging data. **Evaluate** the strengths and weaknesses of the data sources.

TOR 2: Evaluate the methods used to estimate commercial and recreational landings and discards. **Evaluate** the uncertainty in the data and spatial distribution of the fisheries. **Evaluate** new MRIP estimates of catch, effort and the calibration method if available.

Review TOR 3: SCAA Model



TOR 3: Evaluate the methods and models used to estimate annual fishing mortality, recruitment, total abundance and stock biomass (total and spawning stock) for the time series and evaluate their uncertainty. Evaluate retrospective analysis of the model results and historical retrospective. Evaluate estimates of exploitation by stock component and sex, where possible, and for total stock complex.

Review TOR 4: Tagging Model



TOR 4: Evaluate estimates of mortality and abundance derived from tagging data, and provide recommendations for further development of the tagging models.

Review TOR 5 & 6: BRPs + TACs



TOR 5: Evaluate the choice of reference points and the methods used to estimate them. Recommend stock status determination from the assessment, or, **if appropriate, specify alternative methods or measures.**

TOR 6: Evaluate annual projections of catch and biomass under alternative harvest scenarios.

Projections should estimate and report annual probabilities of exceeding threshold BRPs for F and probabilities of falling below threshold BRPs for biomass.

Review TOR 7: Future Work



TOR 7: Review and evaluate the status of the Technical Committee research recommendations listed in the most recent SARC report. Identify new research recommendations. Recommend timing and frequency of future assessment updates and benchmark assessments.

Review TOR 8: Peer Review Report



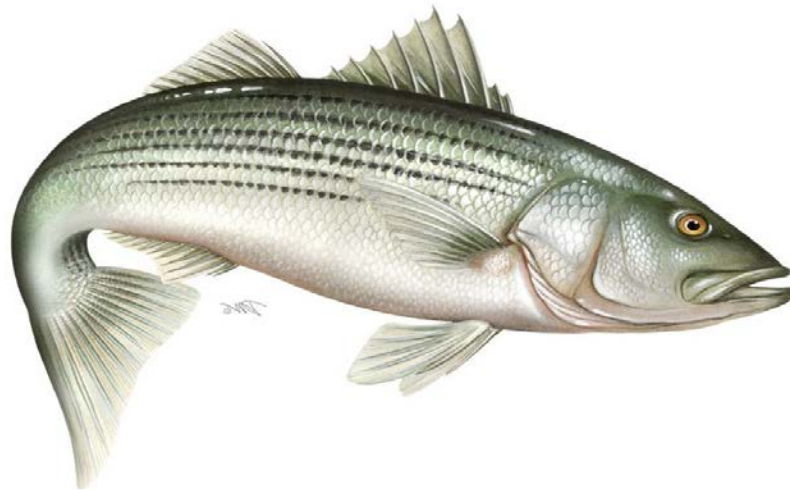
TOR 8: Prepare a peer review panel terms of reference and advisory report summarizing the panel's evaluation of the stock assessment and addressing each peer review term of reference. Develop a list of tasks to be completed following the workshop. Complete and submit the report within 4 weeks of workshop conclusion.



Questions?

2018 Benchmark Assessment:

What type(s) of BRPs to pursue?



Amendment 6 (2003)



- $F_{MSY}=0.41$ based on ADAPT VPA, YPR and Shepherd S-R relationship
 - $F_{target} = 0.30$ on the coast
 - $F_{target} = 0.27$ for Chesapeake Bay
- $SSB_{threshold} = SSB_{1995}$
- $SSB_{target} = SSB_{threshold} \times 125\%$
- State-specific quota allocations



Addendum IV to Amendment 6 (2014)



	Female Spawning Stock Biomass (SSB)	Fully-Recruited Fishing Mortality (F)
Threshold	$SSB_{1995} = 57,626 \text{ mt}$	0.22
Target	$125\% SSB_{\text{threshold}} = 72,032 \text{ mt}$	0.18

- Age-specific M
- New target and threshold F linked with the target and threshold SSB
- No reference points for the Chesapeake Bay



2018 Benchmark



- Opportunity to revisit management/fishery goals for this species
 - Current BRPs based on historical performance
 - Board was satisfied with fishery/stock conditions in 1995
 - Goal is to keep the stock at or above these levels
- Is this still what the Board wants?



Board Input



- Management goals
 - Maximize yield, catch rates, or trophy-sized fish?
 - Regional reference points
- Less conservative threshold?
- Ecosystem considerations



Board Input



Next Steps

- TC to send detailed memo to the Board prior to the Summer Meeting Week
- Board workshop or subcommittee to provide guidance to the TC/SASC as part of the benchmark assessment process