

# Atlantic States Marine Fisheries Commission

## Habitat Committee

October 18<sup>th</sup>, 2017  
Norfolk, Virginia

### 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 and Introductions (*J. Murray*) 8:30 a.m.
2. Committee Consent (*J. Murray*) 8:40 a.m.
  - Approval of Agenda
  - Approval of Proceedings from Spring 2017
3. ACFHP Update (*L. Havel*) 8:45 a.m.
4. NEFMC Habitat Impacts Modelling Work (*M. Bachman*) 9:00 a.m.
5. Determine New Language for ASMFC HAPC Designations (*L. Havel*) 9:30 a.m.
6. Technology Break 10:30 a.m.
7. Review 2017 Action Plan (*L. Havel*) 10:45 a.m.
  - Species fact sheets
  - *Habitat Hotline Atlantic*
  - Habitat Management Series: SAV Policy Update
8. Lunch 12:00 p.m.
9. Review 2017 Action Plan Con't (*L. Havel*) 1:15 p.m.
  - Habitat Management Series: Aquaculture
  - Climate Change Document
10. Technology Break 2:00 p.m.
11. Finalize 2018 Action Plan: Habitat Management Series Topic (*L. Havel*) 2:15 p.m.
12. Communications Strategy Discussion (*T. Berger*) 2:30 p.m.
13. Finalize 2018 Action Plan Con't: HAPC and Climate Change (*L. Havel*) 3:00 p.m.
14. Other Business 3:45 p.m.
15. Adjourn 4:00 p.m.

The meeting will be held at the Waterside Marriott Hotel, 235 East Main Street, Norfolk VA; 757.627.4200

*Vision: Sustainably Managing Atlantic Coastal Fisheries*

## **ASMFC Habitat Committee Spring 2017 Meeting Summary**

*May 2 – 3, 2017*

*Atlantic States Marine Fisheries Commission*

*1050 N. Highland St.*

*Suite 200 A-N*

*Arlington, VA 22201*

**Committee Members Present:** Russ Babb (NJ), Lou Chiarella (NMFS-NE), Jimmy Johnson (NC), Jake Kritzer (Chair, EDF), Wilson Laney (USFWS-SE), January Murray (Vice Chair, GA), Jay Odell (TNC), Cheri Patterson (NH), Mark Rousseau (MA), Kent Smith (FL), Marek Topolski (MD), Eric Schneider (RI), John Gill (USFWS-NE), and Tony Watkinson (VA)

**On Phone:** Dawn McReynolds, Michelle Bachman (NEFMC), and Josh Carloni (NH)

**Guests:** Dr. Bob Orth (VIMS), Kate Wilke (TNC)

**Staff Present:** Lisa Havel, Pat Campfield, and Toni Kerns

### **Tuesday, May 2**

#### **1:00 pm Welcome and Introductions (J. Kritzer) [Briefing materials (BMs) 1, 2, 3]**

The meeting started on time at 1:00pm sharp. Chairman Kritzer welcomed all to Arlington and the ASMFC offices for the spring meeting.

#### **1:10 pm Committee Consent (J. Kritzer) [BMs 4, 5]**

Jake asked if there were any edits or other requested changes to the fall 2016 meeting minutes. There were none.

#### **1:15 ACFHP Update (L. Havel)**

The Partnership will have their spring Steering Committee meeting later this week. The focus over the winter and early spring has been on finalizing the new 5-year Conservation Strategic Plan. The Southeast Habitat Mapping Project has experienced delays due to staff turnover at Merrimack River Watershed Council, our contractor for the project. The ACFHP subcommittee leading the project met last week with Carol (contractor) to kick start the project, and we have renewed momentum, including a search for a new GIS contractor to complete the project within a year. The MAFMC-sponsored black sea bass habitat project is underway, and ACFHP received its first update from Dr. Brad Stevens on the progress. They had one field season and are in the process of analyzing the data.

#### **1:30 Habitat Website Statistics Overview (L. Havel)**

Lisa provided an overview of website traffic. The most recent issue of the Habitat Hotline has been downloaded 670 times, the Sciaenid Habitat source document has been downloaded 377 times, etc. The Beach Renourishment Habitat Management Series surprisingly gets a lot of hits and downloads.

Jay commented that the numbers are decent, but he would expect more hits for the Habitat Hotline. Jake was happy to finally see the number of hits as he has been wondering for some time how many people were actually grabbing and using Habitat Committee documents.

Jake offered an outreach task to summarize who and how many hits we're getting on the website to publicize the breadth of Habitat Committee information and documents. Lisa said we can consider it as a new task in the 2018 ASMFC Action Plan.

Jake asked why there were so many hits for Beach Renourishment. Cheri suggested perhaps because of Sandy restoration funds continuing to roll out to support projects.

Jake recommended a sidebar box in the next Habitat Hotline or other outreach mechanisms, including Policy Board updates, as the action. Pat suggested comparing Habitat document hits with other ASMFC areas (e.g., menhaden press release, shark board proceedings) to put Habitat numbers into context, which seem impressive b/c Habitat hits are of a similar magnitude to menhaden hits.

Jake asked what do we do with the website traffic results, so we don't leave discussion hanging or unanswered? January suggested a cost-benefit analysis. I.e., figure out how much we're spending on producing Habitat documents vs. how many people are using the documents.

Cheri suggested we start tracking particular things – RFPs, natural disasters, policy decisions – to determine if we're hitting our target/niche audiences fully. Lou: Example Goal – increase the number of hits within first 2 months of the Habitat Hotline release. Jay pointed out we should also try to track numbers accessing Habitat docs/info through email listserves. Lisa offered this is possible for ACFHP website and distribution lists, we'll have to check with Tina Berger to see if ASMFC emails can track hits.

Cheri asked if we can track the types of organizations that are visiting the site and downloading docs. Lisa showed the .edu hits, which were very small relative to .gov, countries, etc. that have many more hits. Mark suggested the action is simply to track the number of hits so we can analyze more than 2 years of data, since this software/service was turned on September 2015 (~1.5 years). Eric noted from another angle we could look at search engines to see if relevant keyword searches are bringing up the Habitat site and documents, or not. An initial search for Atlantic fish habitat brought up the ACFHP site, but not ASMFC Habitat site. We should improve that.

Jay recommended Habitat Committee develop a list of questions and target audiences to provide to Atlantic Communications Committee. Seek their outreach/website expertise to help interpret Habitat website traffic results and develop recommendations to the Habitat Committee for improving or ensuring we continue to reach our target audiences. Jake refined to seek the ACC's feedback by the fall HC meeting, along with our continued tracking of website traffic to build on current results.

**Action Item:** Lisa will solicit questions from the Habitat Committee regarding outreach, and will relay them to Tina for the fall meeting.

2:00 Review of comment procedures and criteria (L. Havel) [BM 10] (presentation available)

Lisa provided an overview of who, what, when, where, how the Commission can comment on development projects that might impact coastal migratory species.

Jay asked if the HC wants to pursue a possible comment letter on the new Executive Order regarding offshore oil and gas development and the DOI revisiting the current (2017-2021 five-year plan, established by Obama Administration). Jay noted the MAFMC and many other organizations have already written letters strongly objecting. Lou encouraged collaboration with all East Coast Councils, and suggested we simply let the Policy Board know, through next week's Habitat update, that Habitat Committee is tracking the Executive Order and if it gets legs they may gather information to support a possible comment letter.

Jake summarized for our general comment letter purposes the Committee's agreement to 1) keep our radar up to identify problematic developments ahead of time, 2) not rely on NOAA only to let us know of potentially problematic projects, 3) keep our standing letter criteria in mind so the Habitat Committee and individual members submitting comment letter request know the bounds for what types of projects/activities are eligible vs. ineligible.

Jake asked if local passage projects are eligible for ASMFC comment letters (in support, or objection?). Should we develop a form letter for the major project types (dam removal, beach nourishment, dredging)? Cheri offered that in NH, they reference ASMFC FMPs when commenting on local passage or other projects, and suggests that's the proper role of the Commission/Habitat Committee. Eric offered that letters from regional bodies can sway a project and we should pursue them.

Lisa summarized that the Habitat Committee action could be to synthesize the FMP habitat section recommendations, Fish Passage WG guidance, and other ASMFC habitat resources as an index or encyclopedia to post on website and have on hand for HC members and constituents to reference and use for local issues or projects.

**Action Item:** Discuss adding a summary document of the Commission's positions on various issues for the 2018 Action Plan at the fall meeting.

2:50 Review 2017 Work Plan (L. Havel) [BMs 7, 8, 9]

Task 4.1.1 pertains to updating Habitat Management Series publications, including 20-year old SAV Policy as a focus in 2017. Lisa provided a summary of ASMFC SAV Policy Questionnaire Responses: State Entities. Results of 11 states responding show most states have one or more agencies responsible for SAV Management, often 1 regulatory + 1 enforcement. Most states provided the ASMFC Policy to the Managing Agency responsible for SAV in their state. 8/11 states have implemented an SAV Assessment and Monitoring Strategy. 10/11 states have implemented/developed a program to limit impacts to SAV.

Kent, Jake, and Lou asked what is the purpose of the Policy, and updating it. The Committee sentiments were that most states have now implemented a policy. Do we need to shift the purpose? Jon suggested SAV protection of existing beds should be the priority, as mitigation/restoration is a crapshoot and not always successful. Kent noted a Florida/Gulf SAV best practices document is also being updated, and we should reference or borrow content from there. He also noted that Florida is currently involved in the mitigation game. Jake asked if we need to shift the focus of a new SAV policy away from establishing programs. Then what is new focus? Eric noted that RI SAV restoration has been largely unsuccessful. If practices have improved, it's certainly worth updating/adding such content. Cheri said the success of plantings in NH hinges on sewage treatment and nutrient overloading that often wipes out eelgrass. Litigation is a big issue in battling treatment plants who argue their effluents are not impacting SAV.

This is a road block to policy evolution and mitigation until the litigation is resolved. Lou favors a greater focus on protection in new policy, over mitigation. We should work with the US ACE and EPA to promote protection. Jay noted the potential for using mitigation and offset funds to use towards improving water quality, possibly a 'Water Quality Fund'. Kent suggests focus for the new document as best practices, 'SAV Guidance for Restoration'. Jon said mitigation is a slippery slope. Jake says it has to be a comprehensive package of mitigation to promote successful restoration.

Kent suggested we ask the Commission's Policy Board on what focal areas they'd like the HC to focus on in revising SAV Policy. Pat expressed concern the Board would not have much feedback, and turn back to Habitat Committee to decide the focus of the updated policy.

Tony suggested the original goals 1-3 are still valid and should be retained. Jon encouraged a shift from point-source impacts (that have been emphasized historically and addressed to some extent) to non-point-source impacts that remain a challenge to address. Jake suggested we hold on further discussion until after Dr. Orth's SAV presentation tomorrow morning. We may glean things from his PowerPoint to guide the direction of our updated policy.

Task 4.1.2 – Updating habitat fact sheets. Cheri volunteered for alewife and Northern shrimp. Tony was volunteered for hickory shad. Lisa requested confirmation for species' volunteers she assigned, as well as volunteers for 'new species' without a fact sheet. Josh Carloni volunteered for Jonah crab fact sheet. Kent volunteered for cobia. Lou volunteered NMFS HMS staff for coastal sharks. Lisa asked those assigned to draft new species, and for updated fact sheets just to look it over and confirm no changes needed (hopefully).

4.1.4 – Artificial Reefs – Lisa has been contributing to the SAFMC artificial reef EFH policy development along with state artificial reef experts; Lisa is also contributing to AFS Artificial Reef Symposium development with Keith Mille (FWC).

4.2.1 – EBFM – If NEFMC comes out with EBFM amendment, we'll distribute that news; there is nothing super tangible planned for this task.

4.2.3 – Habitat Hotline Atlantic 2017 – features SAV, Lisa showed Feature Article assignments; Jay offered an article describing TNC new project on GIS mapping of SAV including new data portal; Lisa/Pat, consider TNC GIS expertise for NOAA Southeast mapping project; Lisa asked for clarification on whether the 'annual issue' is calendar year or fiscal year? Group agrees with annual, since the Habitat Hotline is distributed in December; Jake asked for article guidance and length bounds; Lisa summarized existing guidance HC developed earlier.

4.2.4 – Update Habitat Management Series

We already covered SAV Habitat Management Series; Aquaculture Habitat Management Series is also supposed to be updated in 2017; Lou solicited and received input from GARFO Aquaculture leads; Russ has also secured a Rutgers student to pull the document together and finalize it.

4.3.1 – We're coordinating closely with ACFHP to foster partnerships.

4.4.2 – We're not really doing anything; Pat offered Habitat Committee tracking and distributing habitat research RFPs (note ACFHP does some of this already), perhaps writing ASMFC letters of support for proposals.

4.4.3 – Jay and January noted Building Conservation Trust and CCA collaborations that resulted in \$20-\$250K contributions to habitat projects in SC and GA; January said this contact could be a possible ACFHP partner or donor.

4.4.5 – Jay and Jake claim victory, or at least progress, on website traffic and targeting audience (see notes above on website traffic).

4.6.1 – FMP habitat sections revisions: we recently completed Northern shrimp, tautog, and menhaden habitat section revisions.

4.6.2 – Not much on this front, but Lisa intends to focus energy on habitat and climate impacts in the second half of 2017.

4.6.3 – Lisa has been checking in on ASMFC ecological reference points development, there is currently a multispecies modeling effort planned for delivery in 2019; Jay mentioned new information gleaned while researching the menhaden habitat section revision that is generally relevant to EBFM.

**\*\*End 2017 Action Plan check-in discussion\*\***

Jake revisited Day 2 agenda, moved start up to 8:30am to begin with mitigation banks agenda item.

ADJOURNED 4:45

### **Wednesday, May 3rd**

#### 8:37 am Reconvene (J. Kritzer)

Jake convened the meeting. Everyone was present except for John Gill.

Jake noted that he was late because of a miscalculation on his morning run. He asked that we do introductions, for Dr. Orth's benefit. Everyone did so.

Jake noted that they had made some adjustments to the agenda yesterday, moving item five on estuarine habitat mitigation banks to today, so that Wilson could participate. He asked that we keep the Estuarine Habitat Mitigation Banks discussion to about a half-hour. Jake noted that we also need to have some further discussion of the SAV Policy update, since they didn't come to a clear consensus yesterday. He noted that we can have that conversation, after Bob's presentation. Jake noted that he has a hard stop at noon, since he has an early flight.

#### 8:40 am Estuarine Habitat Mitigation Banks Discussion (W. Laney and K. Smith)

Kent gave the background for this topic. He noted that about six months ago, the St. Johns Water Management District received a permit application for a 300-acre mitigation bank. There was some discussion regarding whether the land proposed for use was public, or private. The applicants wanted to restore an area where dragline ditching had taken place under the Civilian Conservation Corps back in the 1930's. They used physical labor to ditch the marsh and reduce mosquito issues. It was effective for mosquito control, but also eliminated fish habitat. There are about 1,200 acres of this sort of habitat, within the Mosquito Lagoon. They wanted to use hydro-blasting to put the sediment back in the ditches. The issue that came up was going into public lands and developing a mitigation bank. In FL, that has

been done before, down in the Florida Keys. A mitigation bank was developed in an area with lots of propeller scars. Penny Hall and Jud Kenworthy had worked out a good technique for restoring the area, but the question that arose was, why are we doing this on public lands? Also, you want to change the behavior of the people who are causing the problem in the first place. Kent noted that they were unsuccessful in getting the management measures in place which they wanted. They were in a period of anti-regulation sentiment. They are still getting prop-scars in the area. That is the one example of which he is aware. In the end, the application for this new one was withdrawn. The St. Johns Water Management District member reviewing the application was also the Chairman of the Board for the company that wanted to do the bank. Kent noted that there are other issues as well, so things were kind of a mess down there.

Kent noted that Wilson had suggested that we might want to consider some policy regarding mitigation banks, where ASMFC species would be affected. He asked Wilson to comment.

Wilson noted that his concern was that if this is going to become routine, ASMFC needs to consider what sort of guidance, or policy, they may want to put in place. Jake asked for an explanation of for what mitigation banks are used and how they are managed. Wilson noted that he was involved with the first mitigation bank created in the southeast, which was the Company Swamp Mitigation Bank in NC, established by NCDOT for the mitigation of bottomland hardwood forest loss due to highway construction. He noted that some banks such as Company Swamp are conservation banks (e.g., preserved 1432 acres of old-growth BLH forest; a Habitat Evaluation Procedures was conducted to determine the available Habitat Units in the bank, which were then available as credits for other losses); other banks are established for restoration.

Tony Watkinson noted that a big question for him, are the tradeoffs involved; i.e., trading one habitat type for another, or locating a bank tract somewhere other than where the impact is occurring, etc.

Kent noted that a lot of the banks in FL are privately held. He noted the issue of continually “filling potholes” by establishing small banks over the landscape.

Eric noted that RI does not have a mitigation bank, but there has been a lot of discussion about setting one up for SAV. His agency does not manage mitigation. They have a 2:1 requirement for mitigating SAV, but that has proven not effective. They have a couple of projects which will impact SAV, and eelgrass may come back in those areas, but they are having discussions about how to mitigate, and in RI, they will require that the mitigation be completed on public trust lands. They would rarely be able to invest in private lands. They would have to work on public trust lands or waters, since the state has the authority to manage those.

Marek stated, from a conceptual standpoint, it is a credit trading system. So, you could use public lands at financial benefit, with no kick-back to the public.

Jake noted that there has to be some improvement.

Marek noted that they don't pay the public landowner. He asked if it is common to place mitigation on public lands.

Wilson noted that the USFWS Mitigation Policy was recently revised, and also the policy regarding mitigation on National Wildlife Refuges (NWRs) he thinks was changed. So it may be possible to place

mitigation on a NWR. He noted that the concept behind this is to have mitigation on the permanently managed public lands.

Jay Odell noted that the concept of mitigation in public waters is relatively new. TNC is the administrator in Virginia, of the Aquatic Resources Trust Fund, which enables the mitigation of a large number of smaller projects. Most of the work has been with freshwater wetlands, but there has been some work with oysters and coastal wetlands. Jay noted that Secretary of the Interior Sally Jewell, just before she left, issued a Secretarial Order to ramp up the full hierarchy of mitigation, which covered marine as well as terrestrial habitats. Perhaps with offshore wind power development, there is the opportunity for full-scale mitigation in the marine environment.

Cheri noted that she was conflicted on the issue. She noted that NH offers a number of mitigation options. A larger project can buy property, or do something onsite. Smaller projects can put funds into a bank. Over time, the funds accumulate and you can create a meaningful project, which may come closer to mitigating the actual loss. It is hard for her to determine if we are really making progress on conservation, via mitigation banks. We may want to provide input into how we can demonstrate that we are doing more to offset the damage which is occurring. Cheri noted that one staff person she knows in NOAA was pretty adamant about not accepting mitigation measures for smaller projects. People need to think hard about how to reverse the thought process of accepting funds. It has to be more than a 1:1 mitigation ratio.

Wilson gave his soapbox speech regarding mitigation. He basically thinks mitigation is a myth, for reasons which he articulated. Many mitigation follow-up studies have demonstrated that constructed wetlands fall far short of establishing habitat that is either as productive, or as biologically diverse, as the habitat(s) they were designed to replace. He stated that he believes mitigation is fundamentally an administrative construct that we in the natural resources management field have invented to make ourselves feel better about allowing habitat destruction. He noted that the practice of mitigation essentially perpetuates the continuing local loss of habitat, and species, diversity, and basically confirms Aldo Leopold's statement in his "Sand County Almanac" in which he indicates that our conservation efforts are basically doing nothing more than dividing up a diminishing resource. But having said that, he noted that reality is that mitigation is not going away any time soon, so he sees a role for ASMFC in coming up with Best Management Practices for estuarine and marine mitigation banks, given that they are likely to happen.

Jake noted that there is the opportunity to get mitigation for offshore wind.

Lou noted that the Army Corps of Engineers does regulate mitigation, and does use "in-lieu fee" mitigation to address the impacts of small projects. They do have criteria for this approach. To establish a bank, you have to go through a whole formal process which establishes the geographic area, uses, mitigation ratios and other parameters. They are seeing a lot more "preservation" banks now and the ratio could be as high as 27:1. The ratios are established in many ways. A lot of the banks are established on private lands; some for use by DOT are on public lands. There is a banking instrument, which is a legal document. These properties have to be held in perpetuity. It is a pretty rigorous process. All banks we have seen to date are for wetlands. For aquatic areas, how would you put a mitigation bank in perpetual management? It is an interesting concept. Lou recommended that before we act, everyone on the Habitat Committee should become familiar with the federal mitigation guidance. That is what the federal agencies follow.

Mark noted that he is involved in permitting in MA, and agrees with all that Lou just said. If we are going down the road for BMPs, he wanted us to be aware that not all habitats are equal in value. For streams, you may be able to find something equivalent. But, in the marine world, there isn't any equivalent. Things like eelgrass are much more difficult, and there is much more risk involved. It is challenging.

Jake asked if there has been a scientific overview, of what the big questions are. I.e., the same versus different watersheds, or habitat type trade-offs. He noted that in MA, Logan Airport had to extend a runway, and mitigation for eelgrass had to be done. Jake asked if all of the issues have been outlined somewhere. He suggested that we are not ready to come up with a proposal at this time.

Wilson agreed with Lou's suggestion that we read up on mitigation policy and mitigation bank guidelines. He noted again that he thinks mitigation is a myth, but that it is reality, and that we should stick to discussion of mitigation in estuarine, or marine, waters, if we decide to do anything at all. He felt that we should develop BMPs, only if such aquatic banks begin to mushroom.

Lou agreed that we should stick to mitigation banking, and public lands.

Cheri felt that Wilson had contracted things too much, noted that he was leaving out freshwater habitats important to diadromous species. Wilson noted that based on what Lou said, Wilson thought that those areas were already covered by the Corps' mitigation banking guidance.

Cheri and Lou noted, not so much. There is room for improvement.

Jay noted that he agreed with Wilson's statements about mitigation often being a myth, but noted that our first principles should be, "avoid and minimize" as a rule.

Jake suggested that we do read up on the mitigation guidance, and/or literature already out there.

Jay noted that there are some things out there which he felt do make a positive difference. He noted that there was funding to do Virginia offset mitigation, which resulted in 6,000 acres of SAV being established.

**Action Item:** The Habitat Committee will review the topic of mitigation banking on their own time, and will discuss it further at the fall meeting.

Tony Watkinson introduced Dr. Bob Orth. He noted that with regard to SAV, Virginia is up to their necks in the issue, so he invited Dr. Orth to come and talk to us about how SAV is managed, and the future of SAV. He had contacted Lisa and asked if it was okay to invite Bob.

9:05 am Invited presentation (Dr. Bob Orth, VIMS) (presentation available)

*Title: Submersed Aquatic Vegetation in the Chesapeake Bay: Sentinel Species in a Changing World*

Bob gave an update on who he is and his career background. Bob noted that he got his MS at VIMS, and PhD later. He began to work for VIMS in 1974. Bob noted that he has tried to focus in his presentation on the sorts of things they are doing in VA. They are having some of the issues in VA that we discussed. He noted that his title is the title of a paper that will be coming out in *Bioscience* in the next few months. The paper will be available soon. It is a review paper of where they are, with SAV. Bob gave his outline: Why SAV?; Baywide Status; The Eelgrass Story; Fishery Conflicts-resolutions; Aquaculture Issues; Restoration; and The Future. Bob gave a brief overview of each heading.

*Why SAV?:* SAV equals the canary in the mine shaft. SAV is one of the key indicators being used by Bay managers to assess the effectiveness of the clean-up of Chesapeake Bay. It is a key, sentinel Bay species.

Bob gave us a summary in the form of graphs, for the SAV in the Bay. There were four panels. One shows the number of management actions dealing with protection and restoration of SAV. The number of publications about SAV since 1960, only peer-reviewed ones, has increased geometrically. News articles have increased tremendously, most recently about Bay Scallops. The number of restoration projects has mushroomed, and the number of successful ones is very small.

Virginia and Maryland's water quality standards now include SAV acreage as a determinant of Chesapeake Bay water clarity standards. Every acre counts in meeting restoration targets.

There are a lot of partners involved: management jurisdictions; federal agencies; academic/research partners; and non-profits and interested parties.

The big issues are restoration of water clarity, and protection of existing SAV.

Baywide Status: VIMS maps SAV beds every year from aerial photographs/digital imagery acquired from flight lines flown annually over the entire Bay. The funding for this comes from EPA and NOAA. Flights require low wind, minimal cloud cover, low tide, low turbidity, and low sun angle. They are now trying to get funding from the DOD. Bob noted that they have tried to widen the support base. Funding is becoming an issue.

There are multiple species of SAV in the Bay, not just eelgrass. There are some invasives as well. The Bay is divided into segments, and each one has a restoration target. Bob showed us one of the aerial images. He noted that they are in debate with the aquaculture community, over what constitutes a "1" density class. Bob noted that the beds are dynamic over time, and can appear or disappear, on hundreds or thousands of acres, in a given year. It is important to have the density classes in place. Kent asked if they ground-truth, and they do. Bob noted that they get the imagery and check it within 48 hours. They have a good network of people on the ground.

The acres of SAV have increased in recent years. They are at 54% of the Baywide restoration goal. Bob noted that a lot of the SAV is widgeon grass. There is a lot of diversity, more so in the freshwater area of the Bay. Bob noted that the Susquehanna Flats has eleven (11) species of SAV now.

They also map by salinity zones. Most of the widgeon grass is in the mesohaline portion of the Bay. They have had boom and bust years. They may be seeing a new normal in the Bay due to the warming temperatures.

Bob noted that they do an awful lot of water quality monitoring. The Bay Program follows water quality throughout the Bay, and is funding stations to provide real-time water quality data.

Eelgrass and widgeon grass were historically co-dominants. Eelgrass distribution is currently greatly restricted. Bob noted that a big loss occurred with Hurricane Agnes in 1972. It has never recovered thereafter.

Bob reviewed eelgrass changes between 1984 and 2015. Most of the beds in deep water were lost, due to declines in water clarity. There are some changes in mid- to shallow depths. The mean depth is

getting shallower. Eel grass does not like increasing water temperature. As light transmission gets less, you lose eelgrass.

Bob noted that eelgrass can rebound really quickly. They are concerned about having two back-to-back years of high temperatures, which would compromise its ability to recover. Eelgrass will be in big trouble if two consecutive years of high temperature occur.

Bob noted that there are some really high ecosystem services. They have looked at some of the services, in their paper in *Bioscience*. Blue crabs are coming back, but how much more would be there, if the SAV was there, since it is a settlement habitat for juvenile crabs. Services are pretty substantial.

The group with which he is working is using a very complicated modeling process to try to determine what factors affect eelgrass. The big factor is what is going on in the watershed. They hope for a paper in *Science*, or *Nature*, to address the model results. Bob noted that the TMDLs implemented in 2010 do seem to be working to help SAV recovery.

Issues include prop scarring. Bob showed us an aerial of Brown's Bay (Mobjack Bay) from 1997. The scars were from haul seine boats pulling nets. They looked at a couple of sites in the Bay. They actually have data on the scars, and were able to follow them through time. Once they worked with the VMRC and watermen, they addressed the issue, put new regulations in place, and the scarring has been greatly reduced. They restricted the dragging of the net by two vessels, etc. They are publishing a paper on this. The haul seiners were primarily harvesting sciaenids. The recreational anglers didn't like the haul seiners. Bob noted that they are annually monitoring the scars. The commercial watermen are aware of this and have an incentive to keep the impacts minimal.

Bob showed us another aerial of photo of circles caused by clam dredges, in the Chincoteague Bay SAV Sanctuary. They addressed this by eliminating clam dredging in the area. Once the area was marked, the dredging ceased. They monitor annually through aerial imaging the area. This type of fishery only occurred in Chincoteague.

Kent asked if they actually had law enforcement involved in enforcing these areas. Yes, they do.

Bob noted that aquaculture is becoming an issue. Hard clam culture net areas are increasing in areal coverage. The size is 10 X 60 feet. Oysters are also coming into play. There is a "land grab" now, in that shellfish aquaculture proponents are looking for every square foot. Many of the individuals have been grandfathered. Some of the areas leased to people for generations, now want to move into aquaculture, and if there is SAV there, they cannot.

Bob reviewed the regulations passed in January 1998. The regulations prohibited any new aquaculture in areas with existing SAV.

The issue at hand right now, which Tony and the VMRC are working on, is oyster and clam aquaculture plots in SAV beds. Bob noted that one individual put his plots in SAV, and is now supposed to remove the structures. Bob noted that they are not sure what is going to happen with this issue. The culturists are making big bucks, and are not concerned about SAV. Aquaculture is a big economic boost to the Eastern Shore. Bob noted that he simply can't say where this is going to go. They know the importance of SAV, but they make a lot of money. You can see the structures using Google Earth. They are starting

to see conflicts with oyster culture, on the western shore now. You don't see the conflicts with clam culture on the western shore.

Toni asked about ocean acidification.

Bob shared one case where they found some illegal clam nets, and worked out a deal where the individual was able to harvest his clams, and then help in restoring the area. Once the structures were taken out, the eelgrass recovered. Bob noted that they are the regulators, VIMS is just the advisor. They do help to hold the feet of the culturists to the fire.

With regard to restoration, Bob noted that many have tried, using different techniques. Bob noted that many of the restoration sites didn't work, due to water quality. The sites all used adult eelgrass shoots for planting.

Bob showed some aerials of the Merrimac shores and James River restoration sites, where they used a checkerboard pattern. That is one of their more successful sites.

Bob showed us a slide for their James River Polyhaline area. Their SAV goal is over 600 acres.

On the Eastern Shore, the goal is to reestablish eelgrass to the coastal lagoons. Here they used seed-based restoration. He showed us some aerials of seeds dispersed in various patterns. It has worked in coastal Virginia. The eelgrass disperses well from the seeded plots. They have put out over 73 million seeds, and now have 6,195 total acres. Bob noted that back in the 1930's, between a disease and hurricanes, a lot of eelgrass areas wiped out never recovered. That is why using seeds worked so well.

Bob showed us aerials of the South Bay eelgrass restoration from 2001 to 2012. It rapidly grew from isolated plots to a continuous eelgrass bed. Bob showed us another aerial of "NOAA" formed by planting eelgrass seeds.

Bob showed us one of their water quality monitors. As the beds get larger, the water quality improves. They saw huge improvements in water clarity with time, even though it was pretty good at the start.

Bob showed us a graph of water temperature and light at sites in the Chesapeake Bay, and coastal Bays. The coastal Bays have much better conditions due to ocean upwelling.

Bob gave us an update on bay scallops. Bob showed us the data on harvest from the 1920's and 1930's. They have a paper in *Marine Policy* about the bay scallop issues. Bay scallop restoration was initiated in 2009. They assess the population by searching four acres by hand for bay scallops. The adults were held in cages and they do spread. They take three days to do the sampling. They are working in four bays. Most of the initial work was done in South Bay. The South Bay population has served as a source for recruitment by bay scallops to other nearby bays. Bob noted that it is in part a numbers game.

Bob turned to the future. Rising CO<sub>2</sub> levels, temperatures, and SLR are all issues. He showed us graphs of temperature and SLR, which are rapidly increasing. Armored shorelines are another issue. Armoring does affect SAV in areas of higher salinity. *Hydrilla* is another issue. There are some positive things about it, i.e., they do provide cover for recreational fish species. In some cases, *Hydrilla* has created conditions which allow native species to reestablish.

Bob noted that the aerial imagery allows them to see some things that people don't realize, which is useful for enforcement purposes.

Bob noted that tropicalization of their ecosystems is another ongoing event. They are seeing more and more southern species, like pinfish. They are not sure how this will affect ecosystem services.

Bob noted that there is a lot of other research going on, but he focused on what he felt would be of most interest to the Habitat Committee.

Bob noted that Lisa can share the presentation. He noted that he would entertain questions.

Kent asked about using *Ruppia* seeds. Bob noted that there had been at least one effort, and it had failed. Kent noted that they are talking about using *Ruppia* as a species for restoration in Indian River Lagoon. Bob noted that they know *Ruppia* does produce a lot of seeds, but they haven't used them since it revegetates naturally. Kent asked if they were considering going down to Bogue Sound, and getting some *Halodule* for planting. Bob noted that it may be there naturally, if ducks bring it, or the propagules could drift up from NC. Bob noted that the eelgrass may have repopulated on its own, but they sort of nudged it along. Kent noted that *Halodule* is the pioneer species in FL. Kent noted that Bogue Sound is interesting in terms of the shifts between eelgrass and *Halodule*.

Marek asked, from a restoration perspective, should eelgrass be the preferred species, or should other more warm-water tolerant species be considered in lieu of the increasing temperatures? Bob noted that they have focused on improving water clarity, for eelgrass, in the short run. There are only a couple of other species, *Ruppia* and *Halodule*, which are as heat-tolerant. In some cases, *Ruppia* has taken over, and eelgrass may resurge, but then get knocked back again. Bob noted that *Ruppia* has a very shallow root system and may not do as well in highly-dynamic areas.

Marek asked about trying restoration of *Ruppia* and eelgrass on the same site. Bob stated that some have tried. He noted that the seed banks in the sediments are highly variable. Some in MD are using wild celery seeds in freshwater systems. The seed pods are harvested and then they harvest the seeds. Also the seeds can be germinated.

Wilson asked about the ground-truthing and use of citizen-scientists. Bob indicated that they work through the Riverkeepers and use apps for smart phones to gather the data. He noted that you can't identify the species from the aerial imagery.

Jay asked if the restoration targets for the Bay polygons are based on historical data. Yes, they were. Jay asked, from a fish production perspective, do you see differences in species, based on the salinity. Bob stated that for spotted seatrout, he didn't think it made any difference which seagrass species was there. The trout are after the shrimp and crabs, which use both eelgrass and *Ruppia*. Jay asked if we are seeing any sort of signal in crabs and fish, from the 6,000-plus acres of new eelgrass. Bob noted that there were some changes in fishery regulations as well, which may be contributing to the increase. Also, they don't have any data on recruitment and how that may be contributing. The blue crab population has been doing very well. The VMRC has been doing well in battling watermen who want to increase crab harvest.

Kent noted that the SAV probably benefits soft crabs as well. Bob noted that the *Ruppia* also benefits the soft crabs.

Marek asked if the mapping data are publically available. Bob indicated that all of the data are available on the VIMS website. There is a link at which you can find all of the images.

Jay noted that all of the imagery can be imported into the Mid-Atlantic Data Portal as well. Bob noted that they have made all of their data available.

Wilson asked about comprehensive fish surveys of SAV beds. He noted that when he looked, 20 years ago, there wasn't much information on the use by diadromous species of SAV beds. Bob noted that one of their graduate students recently did such a study and it will come out soon. There were some other studies that were not published. Bob noted that Angel Wiley has done some work in Maryland. Bob noted that epifaunal sampling in the beds is really a challenge. The epifauna are more abundant in Virginia coastal bays, than in Chincoteague. Generally speaking, the more grass and the larger, the more animals. Bob indicated that he would be happy to provide copies of all of his published papers to Wilson and others.

Marek asked if Bob and colleagues have seen any zebra mussels in any of their SAV beds. No, they have not. They did see an outbreak of false ribbed mussels in one area, which really cleaned up the water and increased water clarity. Once the mussels declined, the SAV declined. That is another exotic species and they don't know how it got there.

Kent asked about the tropicalization and noted that there are a lot more herbivorous species. Some of those species could cause some changes. Bob noted that gag grouper have increased. He noted also that penaeid shrimp were so abundant that people were harvesting them. Bob noted that the numbers were huge. Kent noted that there is a seasonal abundance of herbivorous fish, which can have an impact on SAV.

Bob noted that pinfish go through an ontogenetic shift in diet, so that as adults they become herbivorous. They eat algae.

Jake asked us to turn back to our SAV Policy and what we may do next. He noted that some members had noted yesterday, that it is still quite relevant. But there are some areas that are not mentioned. Aquaculture for example is not mentioned. The clam and oyster industries were not mentioned. They will no doubt increase. Jake stressed it is the potential for it to increase that is of concern. It seems like this is something that we should address. He noted that we do have the aquaculture policy in development. He suggested that we consider a supplement to the original policy, which could address aquaculture, climate change, and possibly endangered species. It could be something short and manageable.

Cheri suggested that we just update what is there.

Bob noted that they have a bunch of papers about every regulation that has been promulgated in the Bay, which would be useful.

Jake noted that the SAV issue varies a lot along the coast, with regard to impacts, priorities and so forth. Bob noted that in Albemarle Sound, there are a lot of people involved.

Wilson noted that whether we do a supplement, or an update, we should include some of Bob's work on assessing the effectiveness of regulations, as well as what has been done in the last twenty years by the jurisdictions, and also include the new issues that Jake has mentioned. Jake asked how we do it. There is an existing subcommittee.

January read off the SAV Subcommittee membership.

Jake suggested that the subcommittee reconvene and come up with a plan. The charge would be to use much of what is in the existing policy, but update with literature and address the new issues. The intent would be to raise awareness and highlight the value of SAV habitat to ASMFC-managed species.

Wilson noted, looking at the SAV Policy's six key components, Bob's information speaks a lot to Number 1.

Lou and Kent noted that the aquaculture industry poses a new threat to SAV beds. Lou and Kent noted that the "eye in the sky" monitoring also is important to mention.

Jake noted that it would be good to mention the measurable returns from SAV restoration.

Bob noted that they held a workshop about monitoring, and they did discuss drones. Satellite images are also becoming more and more useable. But, clouds interfere, and this is part of climate change. Clear days when fronts are coming through, are less and less common.

Wilson asked if the modeling group with which Bob is working, have made any projections regarding the extent of eelgrass beds and resultant production impacts on fish. No, they haven't tried that work. They have done some work with freshwater species.

Jake thanked Bob for his presentation. He turned to Mark for the AR update. He hoped that could be quickly done. Mark noted that he just had some notes.

#### 10:50 Artificial Reef Committee Update (M. Rousseau)

The joint Gulf and Atlantic Artificial Reef (AR) committees met on February 7-8, in Jacksonville. They are working on a materials guidance document. James Ballard is working on that document and requesting review. January gave a presentation on HAPCs, permitting and AR deployment. Mark noted that there are regional differences in reef requirements and permitting. She had noted that different regions may have different requirements, within the same state, which was viewed as a hurdle. Keith Mille gave a presentation on PCB-free vessels for reef use. Bob Martore from SCDNR gave a report on a deepwater AR off SC, and also talked about sculptured reef materials. There was a lively discussion about SMZ designation off NJ and DE, by Jeff Tinsman and Pete Clarke. Jeff, Mark noted, was very animated. The process began in 2007 and finished in 2015. NJ began their process in 2015, and are still working on the process. But, their Sportfish funding was restored. The National AR Workshop was also discussed. Most of the state AR coordinators attended that workshop. Most of the coordinators were also at the February meeting. There were opinions about the federal role. Some thought most of the focus should be on coordination, and not regulation. The federal agencies were invited to the meeting, but NOAA and the Corps did not send representation to the meeting. So, the feeling was that some of the wind created by the National AR meeting, was taken out of the sails.

Lou asked who from NOAA was invited. It was Russel Dunn. Lou noted that Russ was the Recreational Fisheries Coordinator. Lisa noted that there were a lot of opinions when the National Workshop was being planned about which divisions of NOAA should be involved. Lisa noted that the announcement was made on the website, but she didn't extend individual invitations.

Toni, Lou, and Mark had some discussion about who the NOAA AR contact was. Wilson noted that it used to be Dick Stone Lisa noted that if there are particular people who should be invited, please let her know.

Mark noted that there was a presentation by a company in Japan, which is developing materials for reef use. That was more of a business proposal. Florida provided a presentation on their AR monitoring program. There was a group discussion on dealing with the requirements for documenting historical resources which could be affected by AR placement. There seem to be more requirements for archaeological surveys, before reefs can be placed. Lisa gave an update on the black sea bass project, and most all the states gave updates as well.

The next meeting will be hosted by the Gulf States MFC. The location has not yet been determined.

\*Lou noted that there is a vacancy announcement for a position at the NMFS Lab in Beaufort, of which everyone should be aware.\*

#### 11:05 am Technology Break (10 minutes)

11:16 am: Reconvene

Jake noted that Russ had indicated he may need to do a conference call. Eric is the only one not here.

#### 11:20 am ASMFC HAPC Document Discussion (W. Laney) [BM 11]

Wilson gave the background of the ASMFC Habitat Areas of Particular Concern (HAPC) designations, and explained the origin of the draft document provided in the meeting briefing materials, which he noted is very much a work in progress. He noted that nearly 20 years ago (1998, see ASMFC Habitat Management Series #4, Guidance for the Development of ASMFC Fishery Management Plan Habitat Sections and Source Documents), the Habitat Committee, Commission staff, and some Commissioners (who were members of the Habitat Committee at that time) had debated using the same terms and criteria for HAPCs as were used in the newly-reauthorized and amended Magnuson-Stevens Fishery Conservation and Management Act (MSA). The short reason for doing so was to maintain consistency between Councils, NMFS, and the ASMFC with regard to the science behind such habitat designations. Since that time, HAPC had been designated for many of the species managed jointly with the Councils, and for some of the species solely managed by ASMFC. Fast-forwarding to three or four years ago, the issue of using the same terminology and criteria for ASMFC and federal HAPCs had arisen again, in the context of discussing with Dr. Pace Wilber his need for some way to cite both ASMFC and federal HAPC. The HC and staff at the time decided to continue to use the same federal (i.e., MSA) HAPC terminology, and also, in the interest of producing a document which pulled all of the ASMFC-managed species HAPC designations into one reference, had begun work on the draft which Lisa provided. Wilson and former Habitat Coordinator Melissa Yuen had worked on the draft, with Melissa doing most of the work. Wilson suggested that we empower a work group to complete the document, including consideration of whether or not we might be able to designate HAPCs for some species, such as weakfish, which did not have any HAPC designated in the Habitat Sections of their FMPs. Wilson noted that a lot of new information has been forthcoming in the past 20 years, and noted that ASMFC could take advantage of that new information in revising, or designating, HAPCs and thereby complete the draft document.

Jake noted that he was one of the ones who pushed back on not changing the terminology. He indicated that he didn't see any difference between using consistent terminology for HAPC, and MSY, noting that it is common to define terms, but then to perhaps apply the terms differently, which he felt was the case for both MSY and HAPC.

Lou noted that everything in the draft was a compilation of existing information.

Toni expressed an opposite opinion with regard to changing the terminology used. She noted that she understands the conceptual science behind the ASMFC HAPC, and the federal HAPC, is the same, but in actuality, it is confusing because the federal process is formal and has consultation requirements, whereas the ASMFC process does not. She contended that users will expect the EFH and all the other trappings to accompany any ASMFC designations, when the fact is they do not.

Jake saw no difference between HAPC and MSY, in terms of terminology. He gave an example, of what is required starting from MSY. He asked why that is okay, and this is not.

Toni noted that rebuilding reference points have a hard line from which they go forward.

Toni stated that there are no regulatory teeth in the ASMFC HAPC, and she noted also that federal HAPCs are designated only after EFH is defined. She noted that is NOT the case for species managed solely by ASMFC. Jake agreed that the EFH angle is an important point. Lou noted that in the federal system, EFH is needed before a HAPC can be adopted.

Wilson noted his disagreement with Toni's position. He felt that the rationale behind keeping the terms the same, and using the same criteria, were well laid out in the guidance document that ASMFC published in 1998, and saw no reason to make a change now, despite the EFH difference.

Toni felt that it was being disingenuous to the public to use the same terminology, unless we were using the same process as the federal process for HAPC.

Jake didn't feel it was particularly disingenuous. He used the MSY example again. You can have the same concept that is applied in different ways from a policy perspective, for different reasons, but use the same terminology and definition.

Wilson explained why he felt it was legitimate to use the same term, and same definition, for ASMFC species. The same criteria are used he felt, whether EFH is designated, or not, and as far as he is concerned, the process for determining what constitutes a HAPC is the same regardless of whether ASMFC is doing it, or it is being done by a Council or NMFS.

Jay suggested we try to decide whether it is important for us to identify important habitat areas. He argued strongly that it is important for us to do just that. Then there is the process that we use to designate such areas. There are some differences between the federal process, and the terminology. He noted that he could argue the use of HAPC, both ways. He noted that just because the federal process has much more gravitas, there are a lot of Council/NMFS species with pretty crappy descriptions of EFH/HAPC. He noted that Jessica Coakley is leading a process right now to re-look at all of the mid-Atlantic species EFH, HAPCs and everything. So you can't just assume that anything we might do is inferior, just because it wasn't done in the context of a federal process.

Cheri noted that she has run into a problem, writing some of her permit letters, in using the term "essential fish habitat" and been called on it by federal staff. She noted that the wording is free, and doesn't necessarily have to relate back to policy, nor does it have to be used in the context of a federal process. She suggested if we want to re-word things, it is fine. She noted that all of the states' Wildlife Action Plans are coming up with the same wording. She asked if we are overthinking this.

Jake didn't think so. He noted that in a perfect world, we have a set of concepts that relate to reference points for fisheries, which relate to fisheries the world over, but for which the policies may vary considerably. He suggested that habitat scientists should take up the cause and do the same thing.

Lou said, he doesn't care what you call it, but from the consultation side of things, we do have a vehicle called the Fish and Wildlife Coordination Act with which we can deal for the species solely managed by ASMFC. The MSA can be additionally used for the EFH/HAPC species. He didn't think it was a huge issue from the consultation side of things to have two entities using the same term, but with different regulatory requirements.

Toni guessed that if we asked them, the Policy Board would tell us to use another term.

Lou asked if there are HAPCs for ASMFC species. Wilson noted that we have had them for 20 years, at least in some cases, and they have been incorporated into the FMPs for each species.

Jake noted that he does have a problem with the ASMFC process jumping right to the HAPC, from EFH. He asked if this really needs to go to the Policy Board.

Toni suggested that it would be good for the Habitat Committee to go to the Policy Board, and have this discussion. She felt that we need to have that discussion. She felt it would be good to have the document outline a process to make such a designation, and then put it in place.

Toni noted that when the HAPC for Atlantic sturgeon came out in the proposed rule, only one person from the Habitat Committee commented on it. She felt strongly that the document should lay out a process.

Jake noted he heard two things. One is that we need to take this to the Policy Board, and ask them for their input. The other approach would be to put in the additional work on the document that Toni suggested, and then take it to the Board.

Toni noted that this work/document is not in the Action Plan. She noted that the chair of the Habitat Committee would need to come and talk to the Policy Board. She suggested that this could be done at the August Board meeting.

Jake suggested that it could be presented to the Policy Board in August.

Lou noted that it would be good to have a consensus from the HC. Jake noted that we had a consensus four years ago. He suggested that bringing the issue to the Policy Board would be good. If we get a lot of consternation about using the same term, then we can come up with a new one.

Jay noted that we do have consensus, he thinks, on the need to identify important habitats. He also felt that we may have a consensus on the term of art as well.

Wilson noted to Toni that what she had referenced as HAPC, was actually Critical Habitat, in the Atlantic Sturgeon Proposed Rule. Cheri noted that was yet another term that was frequently used outside the context of the Endangered Species Act. She noted to Toni and the committee that she felt the reason that only one person had provided comments on the proposed CH back to the staff was that all of the state jurisdictions were providing comments through their own agencies. Wilson noted that the federal representatives on the committee also had the opportunity for input through their own agencies.

Wilson suggested that we at least have to provide some background to the Policy Board, on the origin of this document.

Jake asked for consensus on what we have agreed to do.

Jimmy stated that NCDMF staff felt that there has been some confusion regarding the term, and would like to see ASMFC change the term.

Lisa asked for a subcommittee to develop a presentation to the Policy Board and/or recommend a process for completing the document: January, Wilson, Marek, Pace and Jimmy all agreed to serve.

**Action Item:** Lisa will present this discussion to the Policy Board at the August meeting, and the Habitat Committee will discuss the completion of the HAPC document for 2018. The committee to help with the completion will be January, Wilson, Marek, Pace, and Jimmy.

#### 12:15 pm Other Business

##### • **New chair/vice-chair**

Jake noted that we need a new Chair, and Vice Chair. He noted that the practice is for the Vice Chair to ascend to the Chair. Cheri made the motion for January to be the new Chair. Jake noted that it has also been practice for the incoming Chair to procure a Vice Chair. January had recruited Marek. Wilson moved, Jay seconding, Toni saying “we don’t make motions” that Marek be approved by acclamation.

Lisa noted that the NFHP Board meeting conflicts with the ASMFC annual meeting this year. She noted that the annual meeting will be in Norfolk, VA. She noted that meeting input is welcomed.

Kent noted that the separate meeting this year, worked out well for those who have conflicts because they have to be at other meetings.

Jake noted that when we met with the full Commission in St. Augustine, he was able to deliver the report in person, and there were advantages to that, such as networking with the Commissioners.

Toni noted that January could still come up for the day.

Jake noted that we could resolve this via email.

Jake noted that this will be his and Cheri’s last meeting, as Habitat Committee members. Jake noted that Lisa and Toni had asked him to come to the fall meeting. Jake noted that he had been on the committee for ten years. Cheri thanked him for his service. She noted that she would miss these two committees terribly. Doug pulled her off to work on other committees. She noted that the Habitat Committee really does a lot of good work and makes people learn. She will really miss working with us.

Wilson asked how securing a replacement NGO representative for Jake will work. Jake said it almost for certain will NOT be someone from EDF. Toni noted that Habitat Committee members are appointed by the Commission Chair, so appointments don’t have to go through any other approvals. She noted that they had talked about having someone from the Smithsonian. Jake noted that he and Lisa had discussed someone from the GMRI. We want someone with a good science background, but it doesn’t mean that they can’t advocate. He noted it would be good to have some geographic spread.

Cheri asked if we can get another representative, so that we would have NGO representation from each geographic region. Cheri noted that the GMRI wouldn't cover the entire coast.

Jake suggested that we send potential candidates to Lisa. We could also think about a third seat.

Jay Odell noted that he had recently accepted a new position with TNC, as Director of Fisheries, so while he doesn't have to immediately bolt, he will have a lot of new focus. He wants to hold the TNC seat on the Habitat Committee. Kate Wilke on his staff, has done a lot of work on the sciaenid document, and other work, and will be a good person for a TNC seat. Toni concurred that could be done.

Wilson clarified that we send any candidates to Lisa. He asked for criteria. Toni indicated that they should be non-state, have a good understanding of habitat science, and have a good range of experience under their belt.

Lou asked, what happened to the Army Corps and EPA seats. Lisa noted that the EPA is going through a lot right now.

Wilson recommended we ask Dr. Matt Balazik to be the USACE representative, since he now works for the Corps.

Toni noted that Tom O'Connell is now the Director of the USGS Leetown Science Center, so we could ask him for a USGS representative.

January noted that we don't have a representative from CT or ME. There was some discussion about the reasons we don't have representation from those jurisdictions.

Toni noted that it is hard to engage university staff, since they often want something more than just travel reimbursement.

Eric wondered if we might not be able to get someone from Maine.

Jesse Thomas-Blate was mentioned as a NGO representative, but Toni noted that American Rivers is mostly engaged with rivers and wouldn't cover estuarine or marine habitats.

There was some further discussion regarding obtaining a ME representative. It was noted that Oliver Cox had attended some of our meetings.

Lisa noted that the field trip site is only 15 minutes away. She asked for volunteers to drive. She will provide directions. Lisa indicated we need to allow half an hour for travel. We need to meet at 2:00 pm. Wilson and Jimmy will drive. The group at the hotel will meet in the lobby at 1:25 pm.

12:19 pm Adjourn Day 2

**Field Trip** (joint, open to Habitat Committee and ACFHP Steering Committee membership)

Lisa advised all participants to meet no later than 2:00 pm at the Aquatic Resources Education Center in Anacostia Park. Groups departed from ASMFC headquarters, as well as from the Hilton Garden Inn.

Thirteen individuals (Lisa Havel, plus twelve HC and ACFHP members) met at the Aquatic Resources Education Center (AREC), in Anacostia Park. Participating members included: Russ Babb, Lou Chiarella, Bob Groskin, Jimmy Johnson, Wilson Laney, January Murray, Cheri Patterson, Chris Powell, Mark

Rousseau, Kent Smith, Jesse Thomas-Blate, and Marek Topolski. We were treated to a tour of the lower Anacostia River; a visit to a SAV (*Vallisneria*; wild celery) restoration site, and demonstration of the District of Columbia Department of Environment (DDOE) electrofishing boat. Our host boat was staffed by Daniel “Danny” Ryan, Chief of the Fisheries Research Branch, and Shellie Spencer, Fisheries Biologist. Shellie is the Project Manager for the SAV restoration project and gave us a thorough briefing. Danny answered many of our questions regarding fish and fisheries on the Anacostia, Potomac River, and Rock Creek. Three other staff members were on the electrofishing vessel and showed us examples of fish present, including a large Northern snakehead. After our boat trip (down the river to near the confluence with the Potomac River) some of us returned to the AREC and toured the remaining exhibits which we had not taken time to visit prior to our trip. The site visit ended around 4:00 pm.

### **Action Items**

Page 2

**Action Item:** Lisa will solicit questions from the Habitat Committee regarding outreach, and will relay them to Tina for the fall meeting.

Page 3

**Action Item:** Discuss adding a summary document of the Commission’s positions on various issues for the 2018 Action Plan at the fall meeting.

Page 8

**Action Item:** The Habitat Committee will review the topic of mitigation banking on their own time, and will discuss it further at the fall meeting.

Page 18

**Action Item:** Lisa will present this discussion to the Policy Board at the August meeting, and the Habitat Committee will discuss the completion of the HAPC document for 2018. The committee to help with the completion will be January, Wilson, Marek, Pace, and Jimmy.

# **HAPC Designations for Fish and Shellfish Species Managed by the Atlantic States Marine Fisheries Commission**

As of July 1, 2013

Prepared by ASMFC's Habitat Committee and Habitat Coordinator

## **1.0 Introduction**

### **1.1 General Background**

The Atlantic States Marine Fisheries Commission (ASMFC) serves as a deliberative body that coordinates the conservation and management of the Atlantic coastal states' shared nearshore fishery resources for sustainable use. The Commission's Habitat Committee functions to promote and support cooperative interstate conservation, restoration, and protection of vital habitats for Commission-managed species. One of these functions includes the development of recommendations for Habitat Areas of Particular Concern (HAPC). This concept of priority areas within Essential Fish Habitats (EFHs) is intended to focus conservation efforts on specific habitats that are most ecologically important, vulnerable, and/or necessary to support each life stage of a species.

Although habitat information is a required component of a fishery management plan (FMP), the amount of information on each species varies. FMPs are written as management needs arise, and the frequency of updates is not consistent between plans. Consequently, HAPC designations range from non-existent to specific and recent. This report was initiated from the need to assess the quality of HAPC designations for Commission-managed species and prioritize interstate FMPs for habitat updates. It contains the most recent language as written in the Atlantic States Marine Fishery Commission's (ASMFC) fishery management plan (FMP) documents (i.e. interstate FMPs, amendments, addenda and source documents, as well as Council FMP documents when applicable) that contain designations of Habitat Areas of Particular Concern (HAPCs). This document will be updated as new designations are set.

### **1.2 Councils and Commission's Definitions of HAPC**

Under the 1996 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act, federal Fishery Management Councils were required to identify *essential fish habitat* (EFH) for all species under federal management; federal agencies proposing projects within EFH areas would then be required to consult with NMFS to determine the impact of those projects on EFH. This mandate was required only for federally managed species, not for species solely under the management authority of ASMFC.

The ASMFC has chosen to adopt EFH designations prepared by the federal Fishery Management Councils for species managed jointly or in association with the Councils. For species solely under Commission management, the Commission has chosen to identify all habitat and Habitat Areas of Particular Concern (HAPCs), but will refrain from identification of EFH. The HAPCs identified by the Commission do not require consultations, or any other regulatory compliance authority.

ASMFC's guidelines for identifying HAPCs in FMPs are stated in the box below.

<p>Description of HAPC from ASMFC's <i>Habitat Operational Procedures Manual, 2008</i></p> <p><b>1.4.1.2: Identification and Distribution of Habitat and Habitat Areas of Particular Concern</b></p> <p>Habitat Areas of Particular Concern, or HAPCs, are areas within EFH that may be designated according to the Essential Fish Habitat Final Rule (2002) based on one or more of the following considerations: <b>(i) the importance of the ecological function provided by the habitat, (ii) the extent to which the habitat is sensitive to human-induced environmental degradation, (iii) whether, and to what extent, development activities are, or will be, stressing the habitat type, or (iv) the rarity of the habitat type.</b> Descriptions of EFH are not currently being included in Commission FMPs. The definition of HAPCs is therefore modified to be areas within the species' habitat that satisfy one or more of the aforementioned criteria.</p> <p>A HAPC is a subset of the "habitats" described in Subsection 1.4.1.1, and could include spawning habitat (e.g., particular river miles or river reaches for striped bass populations), nursery habitat for larvae, juveniles and subadults, and/or some amount of foraging habitat for mature adults. HAPCs are geographic locations which are particularly critical to the survival of a species. Determination of the amount of habitats (spawning, nursery, subadult, adult residence, and adult migration routes) described in Subsection 1.4.1.1 that should be classified as HAPCs may be difficult. The intent of this subsection is to identify areas that are unequivocally essential to the species, since all used habitats have already been identified in Subsection 1.4.1.1.</p> <p>Examples of HAPCs include: any habitat necessary for the species during the developmental stage at which the production of the species is most directly effected; spawning sites for anadromous species; benthic areas where herring eggs are deposited; primary nursery areas; submerged aquatic vegetation in instances when species are determined to be "dependent" upon it; and inlets such as those located between the Atlantic Ocean and bays or sounds, which are the only areas available for providing ingress by larvae spawned offshore to their estuarine nursery areas.</p> <p>The extent of HAPCs for a species may depend on the current stock size and/or the stock size for which a species Management Board and Technical Committee establishes targets. Given the current state of knowledge with regard to the relationship between habitat and production of individual species, this information is not likely to be available for many species.</p> <p>If known, the historical extent of HAPCs should also be included in this subsection, in order to</p>
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establish a basis for Subsection 1.4.1.3. Use of GIS is encouraged to depict the historical and current extent of HAPCs, and determine the amount of loss/degradation, which will assist in targeting areas for potential restoration.

#### Subsection 1.4.1.3: Present Condition of Habitats and Habitat Areas of Particular Concern

This subsection should include, to the extent the information is available, quantitative information on the amount of habitat and HAPCs that are presently available for the species, and information on current habitat quality. Reasons for reduction in areal extent (either current or historical), should be addressed, for example, “dam construction has eliminated twenty percent of historical spawning habitat.”

All current threats to the species’ habitat should be discussed in this subsection. If known, relative impacts from these activities should be identified and prioritized. For example, hydrological alterations and their impacts are a high priority for anadromous species. These may include freshwater inflow/diversions; changes in flows due to hydropower, flood control, channel modifications, or surface/aquifer withdrawals; and saltwater flow changes due to reductions in freshwater inflows or deepening of navigation channels, which facilitate upstream salinity increases. Threats should also be assessed for their effect on the ability to recreationally and commercially harvest, consume, and market the species.

This subsection will serve as a basis for the development of recommended or required actions to protect the species’ habitat, which will be outlined in Section 4.4. For example, the effectiveness of water quality standards should be reviewed in this subsection. If they are ineffective or inappropriate at protecting water quality at a level appropriate to assure the productivity and health of the species, then a recommendation should be included under the recommendations section (Section 4.4) for improvement of water quality standards.

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## 2.0 Assessment of HAPC Designations for Commission-Managed Species

[Summary Table: we need to discuss what information to include in the table. Below is some suggested info...]

Species	HAPC Type	Most Recent Date of Designation	Need for Update (high priority, medium priority, low priority)

DRAFT

## **American Eel (*Anguilla rostrata*)**

FMP Document: [Interstate Fishery Management Plan for American Eel](#)  
Date of Designation: April 2000

Management by Council: None (under Status Review by USFWS)

Habitat Management Series: **Atlantic Coast Diadromous Fish Habitat: A Review of Utilization, Threats, Recommendations for Conservation, and Research Needs: Chapter 7: American Eel**  
Habitat Management Series #9  
Date of Designation: January 2009

### **Comments on HAPC Designation**

The FMP's HAPC designation needs to be updated with current information. For example, the company that was harvesting Sargassum has since expired (and possibly out of business). The *Diadromous Fish Habitat* source document's chapter on American eel, written much more recently, can be used to update the FMP's HAPC designation and recommendations. The Habitat Committee needs to work with South Atlantic Fishery Management Council staff to edit the section on Sargasso Sea.

Furthermore, the USFWS is currently conducting a status review of the American eel.

#### **HAPC Designation from [Interstate FMP for American Eel](#)**

Pages: 34-35

##### 1.4.1.2 Identification of Habitat and Habitat Areas of Particular Concern

###### 1.4.1.2.1 Ocean

Importance: Spawning - Reproduction for the panmictic population occurs in the Sargasso Sea, therefore, the area used for reproduction might be identified as a habitat area of particular concern. Until recently, no threats to the functional health of this area had been reported.

Concern: Sargassum seaweed is currently harvested in U.S. waters by trawling primarily by one company. The harvesting of sargassum began in 1976, but has only occurred in the Sargasso Sea since 1987. Since 1976, approximately 44,800 dry pounds of sargassum have been harvested, 33,500 pounds of which were from the Sargasso Sea (SAFMC 1998). It is unknown whether this harvest is having direct or indirect influences on American eel mortality. Harvesting sargassum is being eliminated in the south Atlantic EEZ and State waters by January 1, 2001 through a management plan adopted by the South Atlantic Fisheries Management Council (SAFMC 1998).

The extent of eel bycatch in these operations is unknown. The drift of leptocephalus larvae from the Sargasso Sea towards the Atlantic coast may be impacted by changes in the ocean currents.

Such changes have been predicted to be due to global warming. The potential impact on the drift of larvae is unknown at this time. Currents, primary production, and potential influence of toxins transferred from the adults to the eggs influence the success of hatch, larval migration, feeding and growth.

#### 1.4.1.2.2 Continental shelf

Importance: Larval migration, feeding, growth; juvenile metamorphosis, migration, feeding and growth.

Concern: Glass eel survival (growth, distribution and abundance) is probably impacted by a variety of activities. Channel dredging, shoreline filling, and overboard spoil disposal are common throughout the Atlantic coast, but currently the effects are unknown. Additionally, these activities may damage American eel benthic habitat. However, the significance of this impact also remains unknown. Changes in salinity in embayments, as a result of dredging projects, could alter American eel distribution.

#### 1.4.1.2.3 Estuaries/Rivers

Importance: Juvenile, sub-adult and adult migration corridors and feeding and growth areas for juvenile and sub-adult.

Concern: Elver and yellow eel abundance is probably also impacted by physical changes in the coastal and tributary habitats. Lost wetlands or access to wetlands and lost access to the upper reaches of tributaries have significantly decreased the availability of these important habitats with wetland loss estimated at 54% (Tiner 1984), and Atlantic coastal tributary access loss or restriction estimated at 84% (Busch et. al 1998).

Habitat factors are probably impacting the abundance and survival of yellow and silver eel. The nearshore, embayments, and tributaries provide important feeding and growth habitat. The availability of these habitats influences the density of the fish and may influence the determination of sex. Therefore, since females may be more common in lower density settings (Krueger and Oliveira 1999, Roncrati et al. 1997, Holmgren and Mosegaard 1996, Vladykov 1966, Liew 1982, Columbo and Rossi 1978), it is crucial that the quantity and quality of these habitats be protected and restored (including upstream access). The blockage or restriction to upstream migration caused by dams reduces or restricts the amount of available habitat to support eel distribution and growth. Fish that succeeded to reach upstream areas may also face significant stresses during downstream migration. If eel have to pass through turbines, mortality rates range from 10 to 60 percent (J. McCleave, U. of Maine, Person. Com.) and the amount of injury is not well documented.

An estimate of nearshore habitat area was obtained from NOAA's Average-Annual, Three-Zone Salinity Metadata and for coastal stream length from Busch et al. (1998) as summarized in Table 4. Although the nearshore zones have been changed due to anthropogenic activities such as dredging, filling, discharges of waste and contaminants and the introduction of exotic species, nearshore habitat trend data are not available for this area. Preliminary data

describing trends in lost stream habitat (access length) are presented in Section 1.4.1.2.3.3.

HAPC Designation from the [Atlantic Coast Diadromous Fish Habitat: A Review of Utilization, Threats, Recommendations for Conservation, and Research Needs: Chapter 7: American Eel](#)

Page: 178-179

## Section II. Identification and Distribution of Habitat Areas of Particular Concern for American Eel

Habitat types that qualify as Habitat Areas of Particular Concern (HAPCs) for American eel include the spawning and hatching grounds, nursery and juvenile habitat, and adult habitat. Oceanic waters of the Sargasso Sea comprise the spawning and hatching grounds for American eel. This is the only suspected location of reproduction for American eel, and therefore, is essential to the survival of the species. Little is known about American eel habitat in the Sargasso Sea, and the exact location of spawning and hatching has not been identified. Continental Shelf waters usher the final stage of the larval American eel migration into coastal waters, and are important to larval feeding and growth. This is also where American eel metamorphose into the glass eel stage. Silver-phase eels also cross the shelf during their migration to the Sargasso Sea.

Estuaries and freshwater habitat, including rivers, streams, and lakes, serve as juvenile, sub-adult, and adult migration corridors, as well as feeding and growth areas for juveniles and sub-adults (ASMFC 2000). After American eel larvae transform into glass eels over the continental shelf, they enter estuaries, and ascend the tidal portions of rivers. Glass eels metamorphose into the elver life stage and either continue upstream movements, or cease migrating in the lower saline portions of estuaries and rivers. These estuaries and freshwater habitats serve as foraging grounds for American eel and are important for growth and maturation. American eel can remain in these systems for up to thirty years before maturing and returning to sea.

While estuarine and riverine habitats have been identified as important for the rearing and growth of American eel, many studies failed to find specific American eel habitat associations within them (Huish and Pardue 1978; Meffe and Sheldon 1988; Smogor et al. 1995; Bain et al. 1988; Wiley et al. 2004). Huish and Pardue (1978) found no difference in American eel abundance in relation to width, substrate, flow, and depth in North Carolina streams. Likewise, Bain et al. (1988) found that American eel habitat use was not related to specific habitat features including depth, water velocity, and substrate in two Connecticut River tributaries. Wiley et al. (2004) also did not find any eel-stream habitat relations. The researchers found that eel density was correlated with distance from the ocean (Wiley et al. 2004). While anguillid eels have the ability to survive in a wide variety of habitats, water quality is still an

important factor to their health and survival.

Given the great variation in demographics that occurs across latitudinal and distance in land gradients, all areas may not contribute equally to American eel production and recruitment. Despite this, geographic patterns of differential recruitment are unexplored. This issue must be addressed before identifying specific Habitat Areas of Particular Concern.

## **American Lobster (*Homarus americanus*)**

FMP Document: **DRAFT American Lobster Habitat Section by Dr. Jason Goldstein**

Date of Designation: **2013 Pending Board Approval**

Management by Council: **None (federal regulations)**

### **Comments on HAPC Designation**

This section is from the draft lobster habitat section written by Dr. Jason Goldstein and is under review by the American Lobster Technical Committee.

#### **HAPC Designation from the **DRAFT** American Lobster Habitat Section**

##### **1.4.4. Present Condition of Habitats and Habitat Areas of Particular Concern (HAPCs)**

American lobsters utilize and reside in nearly all habitat types throughout their range. This includes estuaries, intertidal zones, coastal nearshore waters, and offshore banks and deep-water canyons (Factor 1995, Lincoln 1998). NMFS (2010) report Table 3.13 describes in-detail these habitats and their characteristics. Habitat Areas of Particular Concern (HAPC) are described as subsets of Essential Fisheries Habitat (EFH) which are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. Although there are currently no documented HAPCs for American lobster, some areas that are particularly vulnerable to protracted and well-documented hypoxia events (LIS, Pearce and Balcom 2005), sub-optimal water temperatures (Buzzards Bay and other areas of SNE and LIS, Pearce and Balcom 2005, Pugh and Glenn 2012) and the presence of deleterious compounds in sediments, certainly warrant consideration for the survival of some lobster populations.

There are anecdotal reports from fishermen of habitats that, at certain times of the year, are spawning and broodstock habitats for ovigerous females. Lobstermen, usually try to avoid these areas, however large numbers of broodstock lobsters that do get caught may be subjected to rough handling practices. While the identification of these 'brooding areas' is known for some crab species (Dungeness crabs, Stone and O'Clair 2002), it is not documented for ovigerous American lobsters. It is essential that identified broodstock and nursery areas are prioritized habitats for lobsters. Finally, because we know that lobsters do in fact populate estuarine systems with regularity (and are purported to reproduce and possibly settle there (e.g., Wahle 1993, Goldstein and Watson unpub. data), these habitats are of particular concern given their pronounced vulnerability to habitat degradation and climate change (Kennish 2002).

## **Atlantic Croaker**

FMP Document: [Amendment 1 to the Interstate FMP for Atlantic Croaker](#)

Date of Approval/Designation: **November 2005**

Management by Council: **None**

### **Comments on HAPC Designation**

There is a specific HAPC identified for Atlantic croaker (estuarine areas), based on common use by larvae and general threats to this habitat type. At the time this HAPC was designated (2005), there were no specific studies on anthropogenic impacts on the quantity and quality of estuarine habitats for Atlantic croaker. The present condition of the HAPCs was based on personal communication; if possible, supplement with literature. This HAPC designation could benefit from an update if there is more recent information on croaker's use of estuaries, condition of algal blooms and eutrophication, and current land uses.

HAPC Designation from the [Amendment 1 to the Interstate FMP for Atlantic Croaker](#)

Page: 18-19

#### 1.4.2 Identification and Distribution of Habitat and Habitat Areas of Particular Concern

Estuaries, which are especially vulnerable to anthropogenic changes, are designated as Habitat Areas of Particular Concern (HAPCs) Atlantic croaker, as well as for other species. Larvae are particularly vulnerable to changes in estuarine conditions. Environmental conditions in spawning areas may affect growth and mortality of egg and larval croakers (Eby and Crowder 2002).

#### 1.4.3 Present Condition of Habitats and Habitat Areas of Particular Concern

Estuarine areas may be functionally reduced in size or degraded by numerous activities, including but not limited to, development, dredging and filling, toxic chemical and nutrient enrichment discharges from point and non-point sources, habitat alteration (e.g., wetlands converted to agricultural use), failing septic systems, and alterations in seasonal runoff patterns (S.J. Vanderkooy, Gulf States Marine Fisheries Commission, personal communication). These events may reduce the quantity and quality of Atlantic croaker habitat. Scientists believe that Atlantic croaker are affected by these changes, but few specific studies have quantified the effects of habitat degradation on the fishery resource (S.J. Vanderkooy, Gulf States Marine Fisheries Commission, personal communication).

Many coastal and estuarine areas have inadequate water quality because of various land use activities. The Chesapeake Bay is one example of an area that experiences eutrophication from agricultural runoff. Excess nutrients entering coastal waters may cause algal blooms that reduce dissolved oxygen, resulting in hypoxic or anoxic conditions, especially during the summer months (R. Lukacovic, Maryland Department of Natural Resources, personal communication). Large hypoxic areas have also been documented in Louisiana's coastal waters during the summer, because of nutrient loading into the Mississippi River from the Midwestern farm belt. These events can directly impact fisheries in the area (S.J. Vanderkooy, Gulf States Marine Fisheries Commission, personal communication).

### **Atlantic Herring (*Clupea harengus*)**

FMP Document: [Amendment 2 to the Interstate FMP for Atlantic Herring](#)

Date of Approval/Designation: **March 2006**

Management by Council: **Complementary FMP with NEFMC**

Council FMP document: [Omnibus Essential Fish Habitat Amendment 2: Essential Fish Habitat and Habitat Area of Particular Concern Designation Alternatives](#)

Date of Approval/Designation: **DRAFT June 2012**

#### **Comments on HAPC Designation**

ASMFC has not designated an HAPC for Atlantic herring, citing the lack of authority to do so. The NEFMC, which has a complementary FMP, has designated EFHs for all life stages and provides specific details on these habitat areas. ASMFC has adopted these EFHs, as stated in Amendment 2 to the Interstate FMP. It may be possible to identify HAPCs from the EFHs.

HAPC Designation from the [Amendment 2 to the Interstate FMP for Atlantic Herring](#)

1.4.1.2 Identification and Distribution of Habitat and Habitat Areas of Particular Concern

(Essential Fish Habitat)

The Atlantic States Marine Fisheries Commission does not have the authority to designate Essential Fish Habitat (EFH) as required by the Magnuson Stevens Fishery Conservation and Management Act (MSFCMA). The New England Fishery Management Council has identified EFH for a range of species, including Atlantic herring, in order to meet the requirements of MSFCMA as amended by the Sustainable Fisheries Act. The ISFMP Policy Board approved a recommendation in June 1998 to include Council EFH designation for FMPs or Amendments that are developed jointly or in association with a Council. Essential Fish Habitat (EFH) for Atlantic herring is described in NEFMC (1998a) as those areas of the coastal and offshore water (out to the offshore boundary of the EEZ) that are designated in Figure 5 through Figure 8.

**Eggs:** Bottom habitats with a substrate of gravel, sand, cobble and shell fragments, but also on aquatic macrophytes, in the Gulf of Maine and Georges Bank as depicted in Figure 5. Eggs adhere to the bottom, forming extensive egg beds that may be many layers deep. Generally, the following conditions exist where Atlantic herring eggs are found: water temperature below 15° C, depths from 20-80 meters and a salinity ranges from 32-33‰. Herring eggs are most often found in areas of well-mixed water, with tidal currents between 1.5 and 3.0 knots. Herring eggs are most often observed during the months from July through November.

**Larvae:** Pelagic waters in the Gulf of Maine, Georges Bank and southern New England that comprise 90° of the observed range of Atlantic herring larvae as depicted in Figure 6. Generally, the following conditions exist where Atlantic herring larvae are found: sea surface temperatures below 16° C, water depths from 50-90 meters, and salinities around 32‰. Herring larvae are observed between August and April, with peaks from September through November.

**Juveniles:** Pelagic waters and bottom habitats in the Gulf of Maine, Georges Bank, southern New England and the middle Atlantic south to Cape Hatteras as depicted in Figure 7. Generally, the following conditions exist where Atlantic herring juveniles are found: water temperatures below 10° C, water depths from 15-135 meters and a salinity range from 26-32‰.

**Adults:** Pelagic waters and bottom habitats in the Gulf of Maine, Georges Bank, southern New England and the middle Atlantic south to Cape Hatteras as depicted in Figure 8. Generally, the following conditions exist where Atlantic herring juveniles are found: water temperatures below 10° C, water depths from 20-130 meters and salinities above 28‰.

**Spawning Adults:** Bottom habitats with a substrate of gravel, sand, cobble and shell

fragments, but also on aquatic macrophytes, in the Gulf of Maine, Georges Bank, southern New England and the middle Atlantic south to Delaware Bay as depicted in Figure 8. Generally, the following conditions exist where spawning Atlantic herring adults are found: water temperatures below 15° C, depths from 20-80 meters and a salinity range from 32-33‰. Herring eggs are spawned in areas of well-mixed water, with tidal currents between 1.5 and 3.0 knots. Herring are most often observed spawning during the months from July through November.

Figure 5. NEFMC EFH designation for Atlantic herring eggs.



Figure 6. NEFMC EFH designations for Atlantic herring larvae.



Figure 7. NEFMC EFH designations for Atlantic herring juveniles.

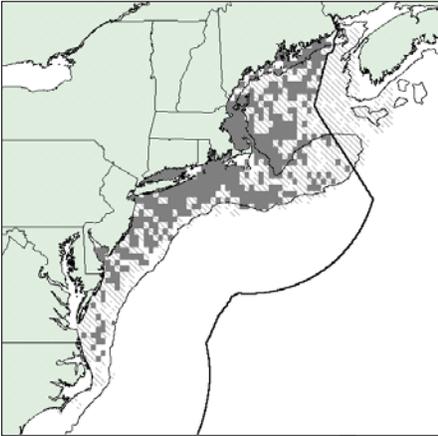
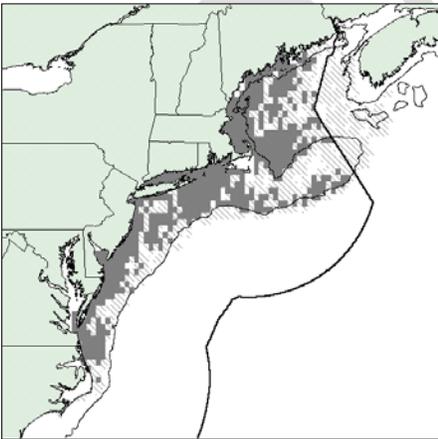


Figure 8. NEFMC EFH designations for Atlantic herring adults.



#### 1.4.1.3 Present Condition of Habitats and Habitat Areas of Particular Concern

A detailed description of habitat quality and habitat areas of particular concern can be found in the Source Document for Amendment 1.

HAPC Designation from the [Omnibus Essential Fish Habitat Amendment 2: Essential Fish Habitat and Habitat Area of Particular Concern Designation Alternatives](#)

[The NEFMC does not currently have HAPC designated for Atlantic herring, however, it has proposed EFHs (see pages 112-119 of Omnibus EFH Amendment 2).]

## **Atlantic Menhaden (*Brevoortia tyrannus*)**

FMP Document: **Amendment 2 to the Interstate FMP for Atlantic Menhaden**

Date of Approval/Designation: **December 2012**

Management by Council: **None**

### **Comments on HAPC Designation**

There is currently no HAPC designation for Atlantic menhaden. However, the EFHs have been recently identified for the life stages, as well as anthropogenic threats to the habitats. These can be used to designate HAPCs.

HAPC Designation from the [Amendment 2 to the Interstate FMP for Atlantic Menhaden](#)

[ASMFC does not currently have HAPC designated for Atlantic menhaden, however, it has proposed EFHs, below.]

#### **1.4.4 Identification and Distribution of Essential Habitat**

Almost all of the estuarine and nearshore waters along the Atlantic coast from Florida to Nova Scotia, serve as important habitat for juvenile and/or adult Atlantic menhaden. Spawning occurs in oceanic waters along the Continental Shelf, as well as in sounds and bays in the northern extent of their range (Judy and Lewis 1983). Larvae are carried by inshore currents into estuaries from May to October in the New England area, from October to June in the mid-Atlantic area, and from December to May in the south Atlantic area (Reintjes and Pacheco 1966). After entering the estuary, larvae congregate in large concentrations near the upstream limits of the tidal zone, where they undergo metamorphosis into juveniles (June and Chamberlin 1959, Houde 2011). The relative densities of juvenile menhaden have been shown to be positively correlated with higher chlorophyll a levels in the lower salinity zones of estuaries (Friedland et al. 1996, Houde and Harding 2009). As juvenile menhaden grow and develop, they form dense schools and range throughout the lower salinity portions of the estuary, most eventually migrating to the ocean in late fall-winter.

Many factors in the estuarine environment affect the behavior and well-being of menhaden. The combined influence of weather, tides, and river flow can expose estuarine fish to rapid changes in temperature and salinity. It has been reported that salinity affects menhaden temperature tolerance, activity and metabolic levels, and growth (Lewis 1966; Hettler 1976). Factors such as waves, currents, turbidity, and dissolved oxygen levels can impact the suitability of the habitat, as well as the distribution of fish and their feeding behavior (Reintjes and Pacheco 1966).

However, the most important factors affecting natural mortality in Atlantic menhaden are considered to be predators, parasites and fluctuating environmental conditions (Reish et al. 1985).

It is clearly evident that estuarine and coastal areas along the Atlantic coast provide essential habitat for most life stages of Atlantic menhaden. However, an increasing number of people live near the coast, which precipitates associated industrial and municipal expansion, thus, accelerating competition for use of the same habitats. Consequently, estuarine and coastal habitats have been significantly reduced and continue to be stressed adversely by dredging, filling, coastal construction, energy plant development, pollution, waste disposal, and other human-related activities.

Estuaries of the mid-Atlantic and south Atlantic states provide almost all of the nursery areas utilized by Atlantic menhaden. Areas such as Chesapeake Bay and the Albemarle-Pamlico system are especially susceptible to pollution because they are generally shallow, have a high total volume relative to freshwater inflow, low tidal exchange, and a long retention time. Most tributaries of these systems originate in the Coastal Plain and have relatively little freshwater flow to remove pollutants. Shorelines of most estuarine areas are becoming increasingly developed, even with existing habitat protection programs. Thus, the specific habitats of greatest long-term importance to the menhaden stock and fishery are increasingly at risk.

#### 1.4.5 Anthropogenic Impacts on Atlantic Menhaden and their Habitat

Pollution and habitat degradation threaten the Atlantic menhaden population, particularly during the estuarine residency of larvae and juveniles. Concern has been expressed (Ahrenholz et al. 1987b) that the outbreaks of ulcerative mycosis in the 1980s may have been symptomatic of deteriorating water quality in estuarine waters along the east coast. The growth of the human population and increasing development in the coastal zone are expected to further reduce water quality unless steps are taken to ameliorate their effect on the environment (Cross et al. 1985). Changing habitats and water quality potentially can affect habitat use and productivity of menhaden in the coastal ocean, estuaries, and particularly the estuarine systems. Menhaden's various life stages occur in waters ranging from the coastal estuaries and inlets along the continental shelf to the western margin of the Gulf Stream from

southern Florida to Nova Scotia (Manooch 1991) Estuarine habitats have been altered dramatically over the past decade.

Perhaps the most significant physical alteration of the Chesapeake Bay watershed in recent decades has been the increase in impervious surfaces, with at least 400,000 hectares projected by 2010 (Brush 2009). These surfaces increase the rate of flow of nutrients, sediment, and contaminants to the Chesapeake Bay (Clagett 2007) and exacerbate eutrophication and expansion of anoxic zones. Although not studied at present, reduced water quality associated with increases in impervious surfaces could diminish habitat for menhaden or their predators.

Effects on menhaden habitat use and productivity are possible as well due to climate change. Menhaden ingress is sensitive to changes in wind patterns and temperatures which are known to be variable and may be influenced by climate change (Quinlan et al. 1999; Austin 2002). Moreover, nursery habitats within bays and estuaries are likely to be transformed by the effects of climate change, in some cases potentially enhancing menhaden productivity and other cases resulting in lower production and recruitment.

The effects of climate change are projected to include: increased water temperatures; sea-level rise; change in precipitation patterns, changes in climate variability that include increased storm and drought events, among other related phenomena (Sherman et al. 2009). These changes can influence salinity, temperature, and nutrients throughout nursery grounds.

In addition to long-term climate change, the Atlantic coast has also experienced shorter-term, decadal fluctuations in weather, shifting between cold-wet and warm-dry periods. Austin (2002) showed that the 1960s were warmer and wetter than the 1970s and 1990s in the mid-Atlantic.

Menhaden recruitment success tends to be relatively high in years when late winter-spring conditions are warm and dry (Wood 2000). The generally low recruitments of YOY menhaden in recent years appear to be constrained by frequent cool and wet, winter-spring conditions that

## **Atlantic Sturgeon (*Acipenser oxyrinchus*)**

FMP Document: [Addendum IV to Amendment 1 to the Interstate FMP for Atlantic Sturgeon: Habitat Considerations](#)

Date of Approval/Designation: **September 2012**

FMP Document: **Amendment 1 to the Interstate FMP for Atlantic Sturgeon**  
Date of Approval/Designation: **July 1998**

Habitat Management Series: [Atlantic Coast Diadromous Fish Habitat: A Review of Utilization, Threats, Recommendations for Conservation, and Research Needs:](#)

[Chapter 8: Atlantic Sturgeon](#)  
Habitat Management Series #9  
Date of Designation: **January 2009**

Management by Council: None (federal regulations, federally listed as Endangered)

### **Comments on HAPC Designation**

The most recent FMP document for Atlantic sturgeon that includes habitat information is the Addendum VI to Amendment 1 to the FMP (2012). It does not specifically use the term “HAPC,” rather refers to “habitats of special significance.” The language is the same as that in the *Diadromous Fish Habitats* source document (2009). Overall, the HAPC information is specific and detailed for each life stage.

HAPC Designation from [Addendum IV to Amendment 1 to the Interstate FMP for Atlantic Sturgeon: Habitat Considerations](#)

#### Section II. Habitats of Special Significance and Trends for Atlantic Sturgeon

Spawning sites/hatching grounds occur in freshwater portions of estuaries and large river tributaries along the Atlantic coast. These areas provide the habitat parameters essential for reproduction, including well oxygenated water, clean substrates for egg adhesion, and crevices that provide cover for post-hatch larvae and abundant macroinvertebrate prey items. This habitat type is very sensitive to anthropogenic impacts, including dams and other river impoundments, nutrient and sediment loading, pollution, navigational dredging, and other coastal developments (especially those with intake structures). Spawning sites are very limited and have been rendered inaccessible and/or degraded since coastal areas have become industrialized and developed.

Nursery areas are limited to freshwater/estuarine tributaries for Atlantic sturgeon age 0 to age 2; nursery areas include bays, estuaries, and nearshore ocean environments for older juveniles (age >2). Freshwater areas are important to larvae and low salinity areas are important to age

0 juveniles, because they cannot tolerate high salinity (Altinok et al. 1998; Secor and Niklitschek 2002). Nursery habitats for juvenile Atlantic sturgeon are essential for growth of this species. This habitat provides foraging grounds for juvenile Atlantic sturgeon, and in some cases, thermal refuge during the summer and winter months (Moser and Ross 1995). Nursery habitats are severely impacted by hypoxic conditions, particularly during summer months when high temperatures can combine with low oxygen levels to degrade and eliminate valuable habitat for juveniles (Secor and Niklitschek 2002; McBride 2004). Other anthropogenic impacts include navigational dredging and port development, sedimentation, nutrient loading (which leads to hypoxic conditions), and recreational and commercial vessel traffic. While nursery areas are less limited in extent than spawning areas, they are still scarce.

Estuarine inlets provide adult and intermediate/late juvenile Atlantic sturgeon with migration corridors to and from freshwater spawning habitat and estuarine nursery grounds. The importance of these areas to Atlantic sturgeon has not been researched; inlets are potentially more rare than spawning habitats. Inlets are impacted by channel alterations (deepening and stabilization) and commercial and recreational coastal development activities.

Wintering grounds for adult and late juvenile Atlantic sturgeon include the nearshore areas off the Atlantic coast from the Gulf of Maine south to at least Cape Lookout, North Carolina (Stein et al. 2004; Laney et al. 2007). These areas provide Atlantic sturgeon with foraging grounds and habitat (Johnson et al. 1997). Erickson et al. (2011) identified aggregation areas off southwest Long Island, along the New Jersey coast, off Delaware Bay, and off Chesapeake Bay. Depth distribution was seasonal: fish inhabited deepest waters during winter and shallowest waters during summer and early fall. Anthropogenic impacts include habitat degradation due to fishing activities, commercial navigation, oil and gas exploration, and construction of offshore liquefied natural gas facilities. Ghost fishing may result in sturgeon losses due to entanglement in lost gear. Winter habitat occurs in coastal nearshore waters, which is expected to not be as limited as spawning habitats and inlets.

#### Trends Habitat Quantity and Quality

Table 3 summarizes the current literature on Atlantic sturgeon habitat associations. Although the amount has not been quantified, Atlantic sturgeon habitat has decreased or been degraded by clear-cutting, agricultural practices, dams, and other channel and watershed modifications since the eighteenth and nineteenth centuries (Hill 1996; Secor et al. 2002; Bushnoe et al. 2005). Historically, Atlantic sturgeon were documented in 38 rivers ranging from the Hamilton Inlet on the coast of Labrador to the St. Johns River in Florida. The ASSRT (2007) most recently reported that 35 of those historical rivers have Atlantic sturgeon present, and 20 are believed to be extant reproducing populations. Once abundant in most rivers and associated estuaries within their range, Atlantic sturgeon have now either been extirpated, or are at historically low levels. Consequently, although Atlantic sturgeon still remain throughout much of their former range, their numbers have been severely reduced (ASSRT 2007).

Currently the National Marine Fisheries Service has proposed that five populations of Atlantic sturgeon along the East Coast receive protection under the Endangered Species Act. The Gulf of Maine population is proposed for listing as threatened, and endangered status is proposed for the Chesapeake Bay, New York Bight, Carolina, and South Atlantic populations.

The quality of Atlantic sturgeon habitat has been seriously impacted by human actions. Since European settlement, overfishing, habitat loss, and poor water quality have all contributed to the decline of Atlantic sturgeon stocks. Most of these impacts have been gradual and are poorly understood (Smith 1985b; ASFMC 1998; USFWS-NMFS 1998; Secor and Gunderson 1998; Secor et al. 2000; Secor and Niklitschek 2001; ASSRT 2007).

HAPC Designation from the [Atlantic Coast Diadromous Fish Habitat: A Review of Utilization, Threats, Recommendations for Conservation, and Research Needs: Chapter 8: Atlantic Sturgeon](#)

## Section II. Identification and Distribution of Habitat Areas of Particular Concern for Atlantic Sturgeon

Habitat types that qualify as Habitat Areas of Particular Concern for Atlantic sturgeon include spawning sites/hatching grounds, nursery areas, inlets, and wintering grounds. Spawning sites/hatching grounds occur in freshwater portions of estuaries and large river tributaries along the Atlantic coast. These areas provide the habitat parameters essential for reproduction, including well oxygenated water, clean substrates for egg adhesion, and crevices that provide cover for post-hatch larvae and abundant macroinvertebrate prey items. This habitat type is very sensitive to anthropogenic impacts, including dams and other river impoundments, nutrient and sediment loading, pollution, navigational dredging, and other coastal developments (especially those with intake structures). Spawning sites are very limited and have been rendered inaccessible and/or degraded since coastal areas have become industrialized and developed.

Nursery areas are limited to freshwater/estuarine tributaries for Atlantic sturgeon age 0-2; nursery areas include bays, estuaries, and nearshore ocean environments for older juveniles (age >2). Freshwater and low salinity areas are important to larvae and age-0 juveniles, because they cannot tolerate high salinity (Secor and Niklitschek 2002). Nursery habitats for juvenile Atlantic sturgeon are essential for growth of this species. This habitat provides foraging grounds for juvenile Atlantic sturgeon, and in some cases, thermal refuge during the summer and winter months (Moser and Ross 1995). Nursery habitats are severely impacted by hypoxic conditions, particularly during summer months when high temperatures can combine

with low oxygen levels to degrade and eliminate valuable habitat for juveniles (Secor and Niklitschek 2002; McBride 2004). Other anthropogenic impacts include navigational dredging and port development, sedimentation, nutrient loading (which leads to hypoxic conditions), and recreational and commercial vessel traffic. While nursery areas are less limited in extent than spawning areas, they are still scarce.

Estuarine inlets provide adult and intermediate/late juvenile Atlantic sturgeon with migration corridors to and from freshwater spawning habitat and estuarine nursery grounds. The importance of these areas to Atlantic sturgeon has not been researched; inlets are potentially more rare than spawning habitats. Inlets are impacted by channel alterations (deepening and stabilization) and commercial and recreational coastal development activities. Examples of inlets used by juvenile and adult Atlantic sturgeon include New York Harbor, Delaware Bay, Oregon Inlet, Hatteras Inlet, and Ocracoke Inlet for Atlantic sturgeon entering/leaving the Cape Fear River, North Carolina. For movement into or out of the James River, Virginia, fish must migrate through the mouth of the Chesapeake Bay (W. Laney, U. S. Fish and Wildlife Service, personal communication).

Wintering Grounds for adult and late juvenile Atlantic sturgeon include the nearshore areas off the Atlantic coast from the Gulf of Maine south to at least Cape Lookout, North Carolina (Stein et al. 2004; Laney et al. 2007). These areas provide Atlantic sturgeon with foraging grounds and habitat for most of the year (Johnson et al. 1997). Anthropogenic impacts include habitat degradation due to fishing activities, commercial navigation, oil and gas exploration, and construction of offshore liquefied natural gas (LNG) facilities. Ghost fishing may result in sturgeon losses due to entanglement in lost gear. Winter habitat occurs in coastal nearshore waters, which is expected to not be as limited as spawning habitats and inlets.

### Section III. Present Conditions of Habitat and Habitat Areas of Particular Concern for Atlantic Sturgeon

#### Habitat quantity

Although the amount has not been quantified, Atlantic sturgeon habitat has decreased or been degraded by clear-cutting, agricultural practices, dams, and other channel and watershed modifications since the eighteenth and nineteenth centuries (Hill 1996; Secor et al. 2002; Bushnoe et al. 2005). Historically, Atlantic sturgeon were documented in 38 rivers ranging from the Hamilton Inlet on the coast of Labrador to the St. Johns River in Florida. The ASSRT (2007) most recently reported that 35 of those historical rivers have Atlantic sturgeon present, and 20 are believed to be extant reproducing populations. Once abundant in every river and associated estuary within their range, Atlantic sturgeon have now either been extirpated, or are at historically low levels. Consequently, although Atlantic sturgeon still remain throughout

much of their former range, their numbers have been severely reduced (ASSRT 2007).

#### Habitat quality

The quality of Atlantic sturgeon habitat has been seriously impacted by human actions. Since European settlement, overfishing, habitat loss, and poor water quality have all contributed to the decline of Atlantic sturgeon stocks. Most of these impacts have been gradual and are poorly understood (Smith 1985b; ASFMC 1998; USFWS-NMFS 1998; Secor and Gunderson 1998; Secor et al. 2000a; Secor and Niklitschek 2001; ASSRT 2007).

## **Black Drum (*Pogonia cromis*)**

FMP Document: **Interstate FMP for Black Drum**

Date of Approval/Designation: **June 2013**

Management by Council: **None**

### **Comments on HAPC Designation**

As the Habitat Committee had noted in its review of the Black Drum FMP's habitat section, the HAPC designation and information was adapted from that of red drum, and needs to be updated through an addendum for black drum specifically. The Habitat Committee decided to address the habitat needs of all commission-managed sciaenids in a new source document, which will serve as a reference for individual species' FMPs.

#### HAPC Designation from the Interstate FMP for Black Drum

##### **1.1.1. Identification and Distribution of Habitat and Habitat Areas of Particular Concern**

*The following section is adapted from the Amendment 2 to the Red Drum FMP*

Habitat Areas of Particular Concern (HAPCs) are defined by the Atlantic States Marine Fisheries Commission as areas within the species habitat which satisfy one or more of the following criteria: (1) provide important ecological function, (2) are sensitive to human-induced environmental degradation, (3) are susceptible to coastal development activities, or (4) are considered to be rarer than other habitat types. For black drum, this includes the following habitats: tidal freshwater, estuarine emergent vegetated wetlands (flooded saltmarshes, brackish marsh, and tidal creeks), estuarine scrub/shrub (mangrove fringe), submerged rooted vascular plants (sea grasses), oyster reefs and shell banks, unconsolidated bottom (soft sediments), ocean high salinity surf zones, and artificial reefs. These areas overlap with the designated HAPCs for red drum, designated in Amendment 2 to the Red Drum Fishery Management Plan (ASMFC 2002). These HAPCs include all coastal inlets, all state-designated nursery habitats (i.e. Primary Nursery Areas in North Carolina), sites where spawning

aggregations of red drum have been documented and spawning sites yet to be identified, areas supporting submerged aquatic vegetation (SAV), as well as barrier islands off the South Atlantic states as they maintain the estuarine environment in which young black drum develop.

A species' primary nursery areas are indisputably essential to its continuing existence. Primary nursery areas for black drum can be found in estuaries, such as coastal marshes, shallow tidal creeks, bays, tidal flats of varying substrate, tidal impoundments, and seagrass beds. Since young black drum move among these varying environments, it is difficult to designate specific areas as deserving more protection than others. Moreover, these areas are not only primary nursery areas for black drum, but they fulfill the same role for numerous other resident and estuarine-dependent species of fish and invertebrates.

Similarly, juvenile black drum habitat extends over a broad geographic range and adheres to the criteria that define HAPCs. Juvenile black drum are found throughout tidal creeks and channels of southeastern estuaries, in backwater areas behind barrier islands and in the front beaches during certain times of the year. It is during this period that juveniles begin moving between low and higher salinity areas (Rooker et al. 2004). Therefore, the estuarine system as a whole, from the lower salinity reaches of rivers to the mouth of inlets, is vital to the continuing existence of this species.

Prior to transfer of management authority for red drum from the South Atlantic Fishery Management Council to ASMFC, the SAFMC reviewed the Essential Fish Habitat (EFH) and HAPC designations for red drum. The SAFMC concluded the EFH and HAPCs would still be protected, as similar areas had been designated for other federally managed species. As a result, these areas, which serve an important role in the black drum life cycle, have retained protection and are referenced here and in the Amendment 2 to the Red Drum FMP (ASMFC 2002).

The designated EFH includes tidal freshwater, estuarine emergent vegetated wetlands (flooded salt marsh, brackish marsh, and tidal creeks), estuarine scrub/shrub (mangrove fringe), submerged rooted vascular plants (seagrass), oyster reefs and shell banks, unconsolidated bottom (soft sediment), ocean high salinity surf zones, and artificial reefs (SAFMC 1998). The area covered ranges from Virginia through the Florida Keys, to a depth of 50 m offshore.

#### **1.1.2. Present Condition of Habitats and Habitat Areas of Particular Concern**

*The following section is adapted from the Amendment 2 to the Red Drum FMP*

##### **1.1.2.1. Coastal Spawning Habitat: Condition and Threats Coastal Spawning**

It is reasonable to assume that areas where coastal development is taking place rapidly, habitat quality may be compromised. Coastal development is a continuous process in all states and all coastal areas in the nation are experiencing significant growth. The following section describes particular threats to the nearshore habitats in the South Atlantic that meet the characteristics of suitable spawning habitat for black drum.

One threat to the spawning habitat for black drum is navigation and related activities such as dredging and hazards associated with ports and marinas (ASMFC, 2013). According to the SAFMC (1998), impacts from navigation related activities on habitat include direct removal/burial of organisms from dredging and disposal of dredged material, effects due to turbidity and siltation; release of

contaminants and uptake of nutrients, metals and organics; release of oxygen-consuming substances, noise disturbance, and alteration of the hydrodynamic regime and physical characteristics of the habitat. All of these impacts have the potential to substantially decrease the quality and extent of black drum spawning habitat.

Besides creating the need for dredging operations that directly and indirectly affect spawning habitat for black drum, ports also present the potential for spills of hazardous materials. The cargo that arrives and departs from ports includes highly toxic chemicals and petroleum products. Although spills are rare, constant concern exists since huge expanses of productive estuarine and nearshore habitat are at stake. Additional concerns related to navigation and port utilization are discharge of marine debris, garbage and organic waste into coastal waters.

Maintenance and stabilization of coastal inlets is of concern in certain areas of the southeast. Studies have implicated jetty construction to alterations in hydrodynamic regimes thus affecting the transport of larvae of estuarine-dependent organisms through inlets (Miller *et al.* 1984; Miller 1988).

#### 1.1.2.2. Estuarine Nursery, Juvenile and Subadult Habitat: Condition and threats

Coastal wetlands and their adjacent estuarine waters constitute primary nursery, juvenile and sub-adult habitat for black drum along the coast. Between 1986 and 1997, estuarine and marine wetlands nationwide experienced an estimated net loss of 10,400 acres. However, the rate of loss was reduced over 82% since the previous decade (Dahl 2000). Most of the wetland loss resulted from urban and rural activities and the conversion of wetlands for other uses. Along the southeast Atlantic coast, the state of Florida experienced the greatest loss of coastal wetlands due to urban or rural development (Dahl 2000). However, the loss of estuarine wetlands in the southeast has been relatively low over the past decade although there is some evidence that invasion by exotic species, such as Brazilian pepper (*Schinus terebinthifolius*), in some areas could pose potential threats to fish and wildlife populations in the future (T. Dahl, pers. comm.).

Throughout the coast, the condition of estuarine habitat varies according to location and the level of urbanization. In general, it can be expected that estuarine habitat adjacent to highly developed areas will exhibit poorer environmental quality than more distant areas. Hence, environmental quality concerns are best summarized on a watershed level.

Threats to estuarine habitats of the southeast were described in Amendment 2 to the Red Drum FMP (ASMFC 2002). Due to the black drum's dependence on estuarine habitats throughout its early years, these same threats are likely to impact black as well as red drum.

Nutrient enrichment of estuarine waters throughout the southeast is a major threat to the quality of estuarine habitat. Forestry practices contribute significantly to nutrient enrichment in the southeast. Areas involved are extensive and many are in proximity to estuaries. Urban and suburban developments are perhaps the most immediate threat to black drum habitat in the southeast. The almost continuous expansion of ports and marinas in the South Atlantic poses a threat to aquatic and upland habitats. Certain navigation-related activities are not as conspicuous as port terminal construction but have the potential to significantly impact the estuarine habitat upon which black drum depend. Activities related to watercraft operation and support pose numerous threats including discharge of pollutants from boats and runoff from impervious surfaces, contaminants generated in the course of boat maintenance, intensification of existing poor water quality conditions, and the

alteration or destruction of wetlands, shellfish and other bottom communities for the construction of marinas and other related infrastructure.

Estuarine habitats of the southeast can be negatively impacted by hydrologic modifications. The latter include activities related to aquaculture, mosquito control, wildlife management, flood control, agriculture and silviculture. Also, ditching, diking, draining and impounding activities associated with industrial, urban and suburban development qualify as hydrologic modifications that may impact the estuarine habitat. Alteration of freshwater flows into estuarine areas may change temperature, salinity and nutrient regimes as well as alter wetland coverage. Studies have demonstrated that changes in salinity and temperature can have profound effects in estuarine fishes (Serafy *et al.* 1997) and that salinity partly dictates the distribution and abundance of estuarine organisms (Holland *et al.* 1996). Hence, black drum are probably as susceptible as any other estuarine organism to such changes in the physical regime of their environment.

#### 1.1.2.3. *Adult Habitat: Condition and Threats*

Threats to the black drum's adult habitat are not as numerous as those faced by postlarvae, juveniles and subadults in the estuary and coastal waters. Current threats to the nearshore and offshore habitats that adult black drum utilize in the South Atlantic include navigation and related activities, dumping of dredged material, mining for sand and minerals, oil and gas exploration, offshore wind facilities, and commercial and industrial activities (SAFMC 1998).

An immediate threat is the sand mining for beach nourishment projects. Associated threats include burial of bottoms near the mine site or near disposal sites, release of contaminants directly or indirectly associated with mining (i.e. mining equipment and materials), increase in turbidity to harmful levels, and hydrologic alterations that could result in diminished desirable habitat.

Offshore mining for minerals may pose a threat to black drum habitat in the future. Currently, there are no mineral mining activities taking place in the South Atlantic. However, various proposals to open up additional areas off the Atlantic coast to seabed mining have been introduced by the Federal Executive and Legislative branches.

Offshore wind farms may also pose a threat to black drum habitat throughout different life stages in the future (ASMFC, 2012). Currently, there are no offshore wind farms established in the United States. However, the Atlantic coast is a potential candidate for future wind farm sites.

## **Black Sea Bass (*Centropristis striata*): North of Cape Hatteras**

FMP Document: **NO HAPC DESIGNATIONS**

Date of Approval/Designation:

Management by Council: **Jointly with MAFMC**

### **Comments on HAPC Designation**

ASMFC has not designated an HAPC for black sea bass due to insufficient data.

HAPC Designation
ASMFC has not designated an HAPC for black sea bass due to insufficient data.

### **Black Sea Bass (*Centropristis striata*): South of Cape Hatteras**

FMP Document: **NO HAPC DESIGNATIONS**

Date of Approval/Designation:

Management by Council: **Jointly with MAFMC**

#### **Comments on HAPC Designation**

ASMFC has not designated an HAPC for black sea bass due to insufficient data.

HAPC Designation
ASMFC has not designated an HAPC for black sea bass due to insufficient data.

### **Bluefish (*Pomatomus saltatrix*)**

FMP Document: [Amendment 1 to the FMP for the Bluefish Fishery](#)

Date of Approval/Designation: October 1998

Management by Council: Jointly (MAFMC)

#### **Comments on HAPC Designation**

It's been 15 years since the decision to not designate an HAPC. Since then, a benchmark stock assessment was reviewed and approved by SAW/SARC in 2005, and may include data sets to support identification of an HAPC.

<b>HAPC Designation from <a href="#">Amendment 1 to the FMP for the Bluefish Fishery</a></b>
2.2.2.2.1 Identification of Habitat Areas of Particular Concern (page 46)
According to section 600.815 (a)(9), FMPs should identify habitat areas of particular concern (HAPC) within EFH where one or more of the following criteria must be met: (i) ecological function, (ii) sensitive to human-induced environmental degradation, (iii) developmental

activities stressing, or (iv) rarity of the habitat.

The MAFMC is not recommending any area as a Habitat Area of Particular Concern for bluefish at this time. The Council initially believed that the Gulf Stream and “slope sea”, because of their importance for larvae and juveniles (Fahay 1998) could be identified as an HAPC, but the Council decided not to specify it because of the same reason this area could not be used solely as a means for identifying EFH (section 2.2.2.1.1 –alternative 3). Simply, as Fahay (1998) states: “There are no available data sets that adequately describe the distribution of this stage in bluefish life history...” The Council may designate HAPC as more data become available.

## **Coastal Sharks (40 species)**

FMP Document: [Interstate FMP for Atlantic Coastal Sharks](#)

Date of Approval/Designation: August 2008

Management by Council: Complementary Federal FMP

### **Comments on HAPC Designation**

ASMFC has not identified HAPCs for the 40 shark species. However, EFHs are identified for specific life stages (i.e. neonate, juveniles, and adults) of each of the 40 species when sufficient data is available.

HAPC Designation
NO HAPC DESIGNATIONS

## **Horseshoe Crab (*Limulus polyphemus*)**

FMP Document: Interstate FMP for Horseshoe Crab

Date of Approval/Designation: December 1998

Management by Council: None/ Jointly/ Complementary FMP

### **Comments on HAPC Designation**

Essential habitats are identified for specific life stages. There may be sufficient data and information to identify HAPCs. Of all the different habitats utilized by horseshoe crabs, beaches may be the most limiting, and thus can be designated as the HAPC for horseshoe crabs. If

possible, identify specific beaches that may support particular populations of horseshoe crabs, or beach areas ideal for protection/ restoration.

**HAPC Designation** from the [Interstate FMP for Horseshoe Crab](#), Section 1.5.2 *Identification and Distribution of Essential Habitat* (page 16):

Prime spawning habitat is widely distributed throughout Maryland's Chesapeake and coastal bays, including tributaries. Horseshoe crabs are restricted to areas that exceed 7 parts per thousand salinity (Maryland Department of Natural Resources, 1998). In the Chesapeake Bay, spawning habitat generally extends to the mouth of the Chester River, but can occur farther north during years of above normal salinity levels. Prime spawning beaches within the Delaware Bay consist of sand beaches between Maurice River and the Cape May Canal in New Jersey and between Bowers Beach and Lewes in Delaware (Shuster, 1994).

## **Northern Shrimp (*Pandalus borealis*)**

FMP Document: **Amendment 2 to the Interstate FMP for Northern Shrimp**

Date of Designation: **October 2011**

Management by Council: **None (federal regulations)**

### **Comments on HAPC Designation**

Northern shrimp's HAPC was recently designated. The nearshore water HAPC should be more specific: what types of habitats do the larval and juvenile stages utilize? More research is needed on the anthropogenic impacts to northern shrimp.

Northern shrimp is currently undergoing a stock assessment, so there may be new information on habitat uses. Also, the Management and Science Committee's Subcommittee on Climate Change has identified northern shrimp as one of the focal species to investigate whether climate change and warming coastal water temperatures are causing shifts in geographic distribution of stocks.

**HAPC Designation from** [Amendment 2 to the Interstate FMP for Northern Shrimp](#)

### 1.4.1.2 Identification and Distribution of Habitat Areas of Particular Concern

Nearshore waters (out to 10 miles)

Nearshore waters provide habitat for the larval and juvenile stages of northern shrimp. The survival of these early life-history stages is essential to the success of the species. Nearshore habitats are impacted by a myriad of anthropogenic activities including coastal development, pollutant run-off, harbor dredging, etc. The effects of these and other human activities on

habitat quality for larval and juvenile northern shrimp are not known at this time.

Deep, muddy basins in the southern region of the Gulf of Maine

Deep, muddy basins in the southwestern region of the Gulf of Maine act as cold water refuges for adult shrimp during periods when most water in the Gulf reaches temperatures that are lethal to this arctic/sub-arctic species. Changes in the oceanographic conditions due to the North Atlantic Oscillation, climate change, or other natural factors may cause warm water to intrude into some of the deep basins in the southwestern Gulf rendering this habitat unsuitable for shrimp and possibly resulting extirpation of local populations.

### **Red Drum (*Sciaenops ocellatus*)**

FMP Document: **Draft Addendum I to Amendment 2 to the Interstate FMP for Red Drum: Habitat Needs and Concerns**

Date of Approval/Designation: **Pending Board Approval**

Management by Council: **None (federal regulations)**

#### **Comments on HAPC Designation**

The red drum habitat section, including the HAPC designation, was approved for public comment in May 2013. It is pending Board approval in August 2013.

**HAPC Designation from [Draft Addendum I to Amendment 2 to the Interstate FMP for Red Drum: Habitat Needs and Concerns](#)**

1.4.2 Identification and Distribution of Habitat and Habitats of Concern (HOC) Red drum populations along the Atlantic coast are managed through the Atlantic Coastal Fisheries Cooperative Management Act (Atlantic Coastal Act). Unlike the Magnuson-Stevens Fishery Conservation and Management Act which addresses fishery management by federal agencies, the Atlantic Coastal Act does not require the Atlantic States Marine Fisheries Commission to identify habitats that warrant special protection because of their value to fishery species. Nonetheless, the Commission believes this is a good practice so that appropriate regulatory, planning, and management agencies can consider this information during their deliberations.

As reviewed in section 1.4.1.1, habitats used by the various life stages of red drum include: tidal freshwater wetlands, estuarine wetlands, tidal creeks, mangrove wetlands, submerged aquatic vegetation (SAV), oyster reefs and shell banks, ocean high-salinity surf zone, hard bottom, and natural and artificial reefs. Spawning occurs within passes and inlets of high salinity estuaries on the southeastern U.S. coast and outer bars within surf zones (Murphy and

Taylor 1990; Johnson and Funicelli 1991; Nicholson and Jordan 1994; Woodward 1994). In more recent studies, increased spawning habitat of red drum upriver to Oriental, NC, was due to elevated levels in salinity (Beckwith et al. 2006). Specific “hot spots” for red drum spawning include: North Carolina – waters of Pamlico Sound near Hatteras, Ocracoke and Drum Inlets and between the Neuse and Pamlico rivers in the western portion of the sound; South Carolina – main channel leading to Charleston Harbor and estuarine waters of St. Helena Sound; Georgia – the Altamaha River estuary; Florida – Ponce de Leon inlet and the Mosquito Lagoon system (ASMFC 2002). For red drum, nursery areas exist throughout estuarine environments, usually in shallow waters with varying salinities. Areas included are coastal marshes, shallow tidal creeks, bays, tidal flats of varying substrate type, tidal impoundments, and SAV beds. Red drum larvae and juveniles occur within a broad range of estuarine habitats. Similarly, subadult red drum are found throughout tidal creeks and channels of southeastern estuaries, in backwater areas behind barrier islands, and in the front along ocean beaches during certain seasons. Estuarine systems as whole, ranging from lower salinity rivers to the mouths of inlets, are needed to support populations of red drum.

A subset of red drum habitats, which the Commission refers to as Habitats of Concern (HOC), is especially important as spawning and nursery areas for red drum. HOC for red drum include all coastal inlets, SAV beds, the surf zone (including outer bars), and state-designated nursery habitats (e.g., Primary Nursery Areas in North Carolina; Outstanding Resource Waters in South Carolina’s coastal counties; Aquatic Preserves along the Atlantic coast of Florida).

### **Scup (*Stenotomus chrysops*)**

FMP Document: [Amendment 13 to the Summer Flounder, Scup and Black Sea Bass Fishery Management Plan](#)

Date of Approval/Designation: **August 2002**

Management by Council: **Jointly with Mid-Atlantic Fishery Management Council and in cooperation with New England Fishery Management Council** and the National Marine Fisheries Service

Complimentary FMP: **The FMP is a joint federal-state FMP**

#### **Comments on HAPC Designation**

The ASMFC Habitat Committee, in collaboration with MAFMC staff and in cooperation with NEFMC and NMFS, should periodically review life history information on scup and consider whether sufficient information exists to warrant any HAPC designation.

HAPC Designation

There is no designated HAPC for scup, either by MAFMC, NMFS or ASMFC.

## **River Herring: Alewife (*Alosa aestivalis*) and Blueback Herring (*Alosa pseudoharengus*)**

FMP Document: [Amendment 2 to the Interstate Fishery Management Plan for Shad and River Herring \(River Herring Management\)](#)

Date of Approval/Designation: May 2009

Habitat Management Series Document: **Atlantic Coast Diadromous Fish Habitat: A review of Utilization, Threats, Recommendations for Conservation, and Research Needs: [Chapter 4: Alewife](#) and [Chapter 5: Blueback Herring](#) Habitat Management Series #9**

Date of Approval/Designation: January 2009

### Management by Council:

Both the Mid-Atlantic and New England Fishery Management Councils are currently considering implementation of management measures which would provide additional conservation for river herring (and shad) during their residence in the Atlantic Ocean (MAFMC through Amendments 14 and 15 to the Squid, Mackerel and Butterfish FMP; and NEFMC through Amendment 5 to the Atlantic Herring FMP). Should the MAFMC ultimately recommend to NMFS that river herring (and shad) be designated as “stocks in the fishery” and NMFS concur, then all four alosine species would require designation of Essential Fish Habitat and could also have federal HAPC designations.

Complementary FMPs: Amendment 14 to the Atlantic Mackerel, Squid, and Butterfish (MSB) Fishery Management Plan (FMP) [in preparation by the MAFMC and NMFS] and Amendment 5 to the Final Atlantic Herring Fishery Management Plan [in preparation by the NEFMC and NMFS].

### Comments on HAPC Designation

The present ASMFC HAPC designation is generic for all four ASMFC-managed alosine species. The ASMFC Habitat Committee should undertake to identify species-specific HAPC for the two river herring species.

HAPC Designation (in ASMFC Shad and River Herring Amendment 2, page 42)

1.3.3.1 Identification and Distribution of Habitat and Habitat Areas of Particular Concern for Alosines

NOTE: Due to the dearth of information on Habitat Areas of Particular Concern (HAPC) for alosine species, this information is applicable to American shad, hickory shad, alewife, and blueback herring combined. Information about one alosine species may be applicable to other alosine species, and is offered for comparison purposes only. Certainly, more information should be obtained at individual HAPCs for each of the four alosine species.

All habitats described in the preceding chapters (spawning adult, egg, larval, juvenile, sub-adult, and adult resident and migratory) are deemed essential to the sustainability of anadromous alosine stocks, as they presently exist (ASMFC 1999). Klauda et al. (1991b) concluded that the critical life history stages for American shad, hickory shad, alewife, and blueback herring, are the egg, prolarva (yolk-sac or pre-feeding larva), post-larva (feeding larva), and early juvenile (through the first month after transformation). Nursery habitat for anadromous alosines consists of areas in which the larvae, post-larvae, and juveniles grow and mature (ASMFC 1999). These areas include spawning grounds and areas through which the larvae and post-larvae drift after hatching, as well as the portions of rivers and estuaries in which they feed, grow, and mature. Juvenile alosines, which leave the coastal bays and estuaries prior to reaching adulthood, also use the nearshore Atlantic Ocean as a nursery area (ASMFC 1999).

Sub-adult and adult habitat for alosines consists of: the nearshore Atlantic Ocean from the Bay of Fundy in Canada to Florida; inlets, which provide access to coastal bays and estuaries; and riverine habitat upstream of the spawning grounds (ASMFC 1999). American shad and river herring have similar seasonal distributions, which may be indicative of similar inshore and offshore migratory patterns (Neves 1981). Although the distribution and movements of hickory shad are essentially unknown after they return to the ocean (Richkus and DiNardo 1984), due to harvest along the southern New England coast in the summer and fall (Bigelow and Schroeder 1953) it is assumed that they also follow a migratory pattern similar to American shad (Dadswell et al. 1987).

Critical habitat in North Carolina is defined as, "The fragile estuarine and marine areas that support juvenile and adult populations of economically important seafood species, as well as forage species important in the food chain." Among these critical habitats are anadromous fish spawning and nursery areas in all coastal fishing waters (NCAC 3I.0101 (20) (NCDEHNR1997). Although most states have not formally designated essential or critical alosine habitat areas, most states have identified spawning habitat, and some have even identified nursery habitat.

Tables in Section II of each alosine species chapter contain significant environmental, temporal, and spatial factors that affect the distribution of American shad, hickory shad, alewife, and blueback herring. Additional tables found on the included DVD contain confirmed,

reported, suspected, or historical state habitat for American shad, hickory shad, alewife, and blueback herring. Alosines spend the majority of their life cycle outside of state waters, and the Commission recognizes that all habitats used by these species are essential to their existence.

## **Shad (American Shad, *Alosa sapidissima*, and Hickory Shad, *Alosa mediocris*)**

FMP Document: [Amendment 3 to the Interstate Fishery Management Plan for Shad and River Herring \(American Shad Management\)](#)

Date of Approval/Designation: February 2010

Habitat Management Series Document: **Atlantic Coast Diadromous Fish Habitat: A review of Utilization, Threats, Recommendations for Conservation, and Research Needs: [Chapter 2: American Shad](#) and [Chapter 3: Hickory Shad](#)**

Habitat Management Series #9

Date of Approval: January, 2009

Management by Council: **Both the Mid-Atlantic and New England Fishery Management Councils** are currently considering implementation of management measures which would provide additional conservation for shad (and river herring) during their residence in the Atlantic Ocean (MAFMC through Amendments 14 and 15 to the Squid, Mackerel and Butterfish FMP; and NEFMC through Amendment 5 to the Atlantic Herring FMP). Should the MAFMC ultimately recommend to NMFS that shad (and river herring) be designated as “stocks in the fishery” and NMFS concur, then all four alosine species would require designation of Essential Fish Habitat and could also have federal HAPC designations.

Complementary FMPs:

### **Comments on HAPC Designation**

The present ASMFC HAPC designation is generic for all four ASMFC-managed alosine species. The ASMFC Habitat Committee should undertake to identify species-specific HAPC for the two shad species.

HAPC Designation in ASMFC [Amendment 3 to the Interstate Fishery Management Plan for Shad and River Herring \(American Shad Management\)](#): Appendix D - Overlapping Habitat and Habitat Areas of Particular Concern for Alosines (page 133)

### 1.3.3.1 Identification and Distribution of Habitat and Habitat Areas of Particular Concern for Alosines

NOTE: Due to the dearth of information on Habitat Areas of Particular Concern (HAPC) for alosine species, this information is applicable to American shad, hickory shad, alewife, and blueback herring combined. Information about one alosine species may be applicable to other alosine species, and is offered for comparison purposes only. Certainly, more information should be obtained at individual HAPCs for each of the four alosine species.

All habitats described in the preceding chapters (spawning adult, egg, larval, juvenile, sub-adult, and adult resident and migratory) are deemed essential to the sustainability of anadromous alosine stocks, as they presently exist (ASMFC 1999). Klauda et al. (1991b) concluded that the critical life history stages for American shad, hickory shad, alewife, and blueback herring, are the egg, prolarva (yolk-sac or pre-feeding larva), post-larva (feeding larva), and early juvenile (through the first month after transformation). Nursery habitat for anadromous alosines consists of areas in which the larvae, post-larvae, and juveniles grow and mature (ASMFC 1999). These areas include spawning grounds and areas through which the larvae and post-larvae drift after hatching, as well as the portions of rivers and estuaries in which they feed, grow, and mature. Juvenile alosines, which leave the coastal bays and estuaries prior to reaching adulthood, also use the nearshore Atlantic Ocean as a nursery area (ASMFC 1999).

Sub-adult and adult habitat for alosines consists of: the nearshore Atlantic Ocean from the Bay of

Fundy in Canada to Florida; inlets, which provide access to coastal bays and estuaries; and riverine habitat upstream of the spawning grounds (ASMFC 1999). American shad and river herring have similar seasonal distributions, which may be indicative of similar inshore and offshore migratory patterns (Neves 1981). Although the distribution and movements of hickory shad are essentially unknown after they return to the ocean (Richkus and DiNardo 1984), due to harvest along the southern New England coast in the summer and fall (Bigelow and Schroeder 1953) it is assumed that they also follow a migratory pattern similar to American shad (Dadswell et al. 1987).

Critical habitat in North Carolina is defined as, "The fragile estuarine and marine areas that support juvenile and adult populations of economically important seafood species, as well as forage species important in the food chain." Among these critical habitats are anadromous fish spawning and nursery areas in all coastal fishing waters (NCAC 3I.0101 (20) (NCDEHNR 1997). Although most states have not formally designated essential or critical alosine habitat areas, most states have identified spawning habitat, and some have even identified nursery habitat.

Tables in Section II of each alosine species chapter contain significant environmental, temporal, and spatial factors that affect the distribution of American shad, hickory shad, alewife, and blueback herring. Additional tables found on the included DVD contain confirmed, reported, suspected, or historical state habitat for American shad, hickory shad, alewife, and blueback herring. Alosines spend the majority of their life cycle outside of state waters, and the Commission recognizes that all habitats used by these species are essential to their existence.

## **Spanish Mackerel (*Scomberomorus maculatus*)**

FMP Document: [Omnibus Amendment to the Interstate Fishery Management Plans for Spanish Mackerel, Spot, and Spotted Seatrout \(Spanish Mackerel Amendment 1, Spot Amendment 1, Spotted Seatrout Amendment 2\)](#)

Date of Approval/Designation: **August 2011**

Management by Council: Jointly managed in collaboration with the South Atlantic Fishery Management Council and in cooperation with the NMFS.

Complementary FMP:

### **Comments on HAPC Designation**

The text provided for Spanish mackerel in the Omnibus Amendment notes that additional delineation is required before HAPC can be designated. Although specific habitats are indicated as included in the EFH designation by the SAFMC, they do not constitute HAPC.

HAPC Designation in [Omnibus Amendment to the Interstate Fishery Management Plans for Spanish Mackerel, Spot, and Spotted Seatrout \(Spanish Mackerel Amendment 1, Spot Amendment 1, Spotted Seatrout Amendment 2\)](#) (page 22)

### Spanish Mackerel

Critical habitats of Spanish mackerel are spawning grounds and areas where eggs and larvae develop. These areas require further delineation before specific habitat areas of particular concern can be designated. However, literature suggests that much of the eastern seaboard may fit this description. Estuaries provide critical nursery habitat to both Spanish mackerel and many of their prey items. The South Atlantic Fishery Management Council's Essential Fish Habitat Plan identifies essential fish habitat for coastal migratory pelagic species as including sandy shoals of capes and offshore bars, high profile rocky bottom and barrier island ocean-

side waters, from the surf to the shelf break zone, but from the Gulf stream shoreward, including *Sargassum* (SAFMC 1998). It further recognizes all coastal inlets and all state-designated nursery habitats as being of particular importance.

## **Spiny Dogfish (*Squalus acanthias*)**

FMP Document: **Interstate Fishery Management Plan for Spiny Dogfish (ASMFC Fishery Management Report No. 40)**

Date of Approval/Designation: **November 2002**

Management by Council: **Jointly managed with the Mid-Atlantic (lead) and New England Fishery Management Councils** in cooperation with the National Marine Fisheries Service

Complementary FMP: [Spiny Dogfish Fishery Management Plan](#), February 1999 (MAFMC)

### **Comments on HAPC Designation**

The ASMFC designation is very generic and should be reassessed and reevaluated in collaboration with the MAFMC and NMFS. The federal FMP designated Essential Fish Habitat for juvenile and adult life stages (pages 27-36), but elected not to designate any HAPC at the time of final publication (1999), due to the lack of any strong association between habitat or location and recruitment for this species (see the MAFMC FMP, pages 36-37). Given the considerable amount of research done since 1999 which employed acoustically-tagged spiny dogfish, additional information should be available to reassess whether any HAPC should be designated for this species.

### **HAPC Designation in the [ASMFC Interstate FMP for Spiny Dogfish](#) (page 45)**

#### **1.4.2 Identification and Distribution of Habitat and Habitat Areas of Particular Concern**

Dogfish are predominately epibenthic species, with no known associations to any particular substrate, submerged aquatic vegetation, or any other structural habitat (McMillan and Morse 1998). However, its life history does focus towards the ocean bottom and spiny dogfish may be potentially adversely impacted if this bottom were to be negatively impacted. In addition, spiny dogfish may rely heavily on estuarine areas for habitat as well as a source of some of their prey such as menhaden.

## **Spot (*Leiostomus xanthurus*)**

FMP Document: **Omnibus Amendment to the Interstate Fishery Management Plans for Spanish Mackerel, Spot, and Spotted Seatrout (Spanish Mackerel Amendment 1, Spot Amendment 1, Spotted Seatrout Amendment 2)**

Date of Approval/Designation: **August 2011**

Management by Council: **None**; however, spot may benefit from the management measures for weakfish bycatch reduction which are included in the SAFMC FMP for the south Atlantic shrimp fishery.

### **Comments on HAPC Designation**

The ASMFC designation is very generic and should be reassessed and reevaluated to determine if there are specific estuarine areas, or spawning areas, which should be designated as HAPC.

HAPC Designation from [Omnibus Amendment to the Interstate Fishery Management Plans for Spanish Mackerel, Spot, and Spotted Seatrout \(Spanish Mackerel Amendment 1, Spot Amendment 1, Spotted Seatrout Amendment 2\)](#) (page 22)

Spot are strongly associated with the bottom as juveniles and adults and are seasonally dependent on estuaries. From Delaware south to Florida, primary nursery habitat includes low salinity bays and tidal marsh creeks with mud and detrital bottoms. Juvenile spot are also found in eelgrass beds in the Chesapeake Bay and North Carolina, however, by late spring juveniles are often much more abundant in tidal creeks than in seagrass habitats. Estuaries, which are especially susceptible to alterations from human activities, are designated as Habitat Areas of Particular Concern (HAPCs) for spot.

## **Spotted Seatrout (*Cynoscion nebulosus*)**

FMP Document: [Omnibus Amendment to the Interstate Fishery Management Plans for Spanish Mackerel, Spot, and Spotted Seatrout \(Spanish Mackerel Amendment 1, Spot Amendment 1, Spotted Seatrout Amendment 2\)](#)

Date of Designation: **August 2011**

Management by Council: **None**; although it should be noted that the South Atlantic Fishery Management Council has required a management measure in the south Atlantic shrimp fishery

(mandatory use of bycatch reduction devices in shrimp trawls) which likely benefits spotted seatrout.]

### Comments on HAPC Designation

This designation doesn't really constitute a HAPC, it just discusses various habitat considerations, with the exception of the SAV designation. The remaining text doesn't meet HAPC criteria and should be reassessed and replaced by the ASMFC Habitat Committee, Spotted Seatrout Technical Committee, and South Atlantic State-Federal Fisheries Management Board. SAV habitat may in fact constitute HAPC for spotted seatrout in NC and FL; however, there is little SAV present in SC and GA, so consideration should be given to what alternate spotted seatrout HAPC may exist in those two, as well as other ASMFC states.

The ASMFC lists SAV as a Habitat Area of Particular Concern (HAPC) for spotted seatrout (ASMFC 1984).

HAPC Designation from the [Omnibus Amendment to the Interstate Fishery Management Plans for Spanish Mackerel, Spot, and Spotted Seatrout \(Spanish Mackerel Amendment 1, Spot Amendment 1, Spotted Seatrout Amendment 2\)](#) (page 22)

Environmental conditions in spawning areas may affect growth and mortality of egg and larvae, as sudden salinity reductions cause spotted seatrout eggs to sink, thus reducing dispersal and survival (Holt and Holt 2003).

Winter water temperature dynamics are of particular importance to habitat quality for spotted seatrout. Generally, spotted seatrout overwinter in estuaries, only moving to deeper channels or to nearshore ocean habitats in response to water temperatures below 10°C (Tabb 1966; ASMFC 1984). Sudden cold snaps have been found to stun and kill large numbers of spotted seatrout in estuarine habitats during winter (Tabb 1966; Perret et al. 1980; ASMFC 1984; Mercer 1984). These large mortality events are often associated with rapid declines (less than 12 h) in temperature, which numb fish before they can escape to warmer waters (Tabb 1958, 1966). It should be noted that cold stun events appear to have a large influence on spotted seatrout population dynamics, but it is difficult to quantify increases in mortality associated with these events. Periodic increases in mortality associated with cold stuns should still be considered when implementing management measures as they are likely to continue to occur on a periodic basis and are largely unpredictable (NCDMF 2010).

**Commented [LW1]:** Per the previous comment which I have removed, the ASMFC wasn't designating HAPCs in 1984, since the term had not yet been developed, I think. We need to check on that fact and make sure. If verified, we need to note that below in the Assessment.

## Striped Bass (*Morone saxatilis*)

FMP Document: [Amendment 6 to the Interstate Fishery Management Plan for Atlantic Striped Bass](#)  
Date of Approval/Designation: **February 2003**

Habitat Management Series Document: [Atlantic Coast Diadromous Fish Habitat: A Review of Utilization, Threats, Recommendations for Conservation, and Research Needs: Chapter 9: Striped Bass](#)  
Habitat Management Series #9  
Date: **January 2009**

Management by Council: **None**. However, NMFS has implemented complementary management measures (prohibition of possession) in the EEZ; and a Presidential Executive Order precludes the sale of any striped bass incidentally captured in the EEZ (E.O. 13449, October 2007)].

#### **Comments on HAPC Designation**

The text contained in the Atlantic striped bass HAPC designation in Amendment 6, does not meet the adopted definition of HAPC. The Habitat Committee should work with the ASMFC Striped Bass Technical Committee and Striped Bass Management Board to develop an appropriate HAPC designation for migratory Atlantic striped bass. The Habitat Management Series' Diadromous Fish Habitat source document can be used to inform the FMP's HAPC designation.

HAPC Designation from [Amendment 6 to the Interstate Fishery Management Plan for Atlantic Striped Bass](#) (pages 11-13)

#### 1.4.2 Identification and Distribution of Habitat and Habitat Areas of Particular Concern

##### 1.4.2.1 Spawning and Egg Habitat:

Striped bass spawn in freshwater or nearly freshwater of Atlantic Coast rivers and estuaries. They spawn above the tide in mid-February in Florida but in the St. Lawrence River they spawn in June or July. The bass spawn in turbid areas as far upstream as 320 km from the tidal zone (Hill, 1989). The tributaries of the Chesapeake Bay are the primary spawning areas for striped bass, but other major areas include the Hudson River, Delaware Bay and the Roanoke River. Spawning is triggered by increased water temperature (Shepherd, 2000). Spawning occurs between 10 and 23 degrees Celsius, but optimal temperature for spawning is between 17 and 19 degrees Celsius. No spawning occurs below 13 degrees Celsius or above 22 degrees Celsius (Bain, 1982). Spawning is characterized by brief excursions to the surface by females surrounded by males, accompanied by much splashing. Females release eggs in the water. This is where fertilization occurs (Raney, 1952). Striped bass do not eat during spawning but they may eat heavily before and afterward. Spawning occurs in the late afternoon and early evening as well as late evening and early morning.

An egg is only viable for about an hour for fertilization. Following fertilization the fertilized

eggs are spherical, non-adhesive, and semi-buoyant and will harden within one to two hours at 18 degrees Celsius (Hill, 1989). Eggs need adequate water velocity, from either current or tidal flow, to keep them suspended in the water column.

Survival of striped bass eggs is dependent on environmental conditions. A temperature range of 17-19 degrees Celsius is important for egg survival as well as for maintaining appropriate dissolved oxygen levels (Bain, 1982). Reductions in dissolved oxygen levels decreased the probability of the eggs surviving, evidenced by the association of low dissolved oxygen levels and the absence of eggs and larvae in the Delaware River (Chittenden, 1971). Water currents are also an important factor for the survival of the eggs. Minimum water velocities of 30 cm/sec are needed to keep the eggs suspended, and fluctuations in the water velocity causes changes in the size of the oil globule surrounding the eggs (Albrecht, 1964). The oil gives the egg buoyancy, so if there is a slower water velocity, than the oil globule will be larger to give the egg more buoyancy. Without the buoyancy, the eggs sink to the bottom, where the sediment may smother them. It is possible for the eggs to hatch if the sediment is coarse and not sticky or muddy, but that survival is limited (Bayless, 1968). Eggs hatch from about 30 hours at 22 degrees Celsius to about 80 hours at 11 degrees Celsius (Hill, 1989).

#### 1.4.2.2 Larvae Habitat

Yolk-sac larvae occur in open water but ultimately form schools and migrate inshore. The fin fold larvae and larger larvae have been collected in mid-channel areas near the bottom. Occurrence of fin fold larvae varied with the time of day and the depth of the river (Hill, 1989). Striped bass larvae usually stay in the open surface waters of estuaries.

There are three stages of larval development. These are: yolk-sac larvae, finfold larvae, and post-finfold larvae (Hill, 1989). The yolk-sac larvae occur right after hatching and usually lasts for about 3 to 9 days. They are 2.0 to 3.7 mm in length and contain an easily identified yolk-sac. The yolk-sac is the main source of energy for the striped bass during this time. Also during this time, the mouth has not been formed and the eyes are not pigmented (Mansueti, 1958). This phase is finished when the yolk-sac is absorbed. The finfold phase lasts for about 11 days and the striped bass reach a length of 12mm. The last phase is the post-finfold larvae which lasts for about 20 to 30 days and the larvae reach a length of 20 mm (Bain, 1982)

Survival of the larvae depends on three main factors: temperature, salinity, and dissolved oxygen. The optimal temperature for larvae is 18 to 21 degrees Celsius, but temperatures of 12 to 23 degrees Celsius have been and can be tolerated (Bain, 1982). Studies have shown that striped bass larvae do better and have a higher survival rate when they are in low salinity waters rather than freshwater (Setzler et al. 1980). The third factor, dissolved oxygen, is equally critical for larvae as it was for the egg stage. A reduction in the dissolved oxygen level,

reduces the chances of survival of the larvae (Turner and Farley, 1971). Other factors that also influence the survival of striped bass larvae include turbulence. While at first it is necessary for the larvae to reside in turbulent waters to maintain position, the larvae quickly become motile and then are able to maintain position on their own (Doroshev, 1970).

Striped bass larvae feed only on mobile planktonic food. They pass the prey repeatedly in order to aim and rush at the prey successfully. It was found that the first successful feeding of a 9-day-old larvae occurred at concentrations of 15,000 Cyclops nauplii and copepodites per liter. By the 11th and 12th day, when the air bladder of the larvae is filled, the prey concentration may be reduced to 2,000 and 5,000 per liter. By days 40 to 50, the striped bass feed on plankton and epibenthos and by days 50 to 80, the food of the striped bass larvae includes mysid shrimp, gammarid amphipods, and fish up to 20 mm in length (Doroshev, 1970).

#### 1.4.2.3 Juvenile Habitat

Juvenile striped bass are able to tolerate a wider range in environmental conditions. The habitat requirements for the juvenile fish are much like the habitat required for the adult bass. As the juvenile bass grow, they migrate to nearshore areas and then to higher salinity areas of an estuary (Raney, 1952). Juvenile striped bass prefer clean, sandy bottoms but they have been found in gravel beaches, rock bottoms, and soft mud areas. They are usually found in schools of as many as several thousand fish. However, the location of the schools depends on the age of the fish (Hill, 1989).

Striped bass become juveniles at about 30 mm, when the fins are fully developed. At this point they resemble adults. Bluefish, weakfish, and other piscivores prey on striped bass (Buckel et al. 1999, Hartman and Brandt 1995b). The location of the striped bass determines the content of its diet. In the diet of the stock from the York River, where the salinity was higher than other places, the fish fed on mysids. In the James River, where the salinity was lower, the same sized fish fed mostly on insects. This and other evidence showed that there is a relationship between the diet of the stock of striped bass and the salinity of the habitat in which the fish live (Setzler et al. 1980).

#### 1.4.2.4 Adult Habitat

Mature adult striped bass leave the estuaries and migrate along the coast where they have similar temperature and dissolved oxygen requirements as juvenile bass (Bain, 1982). Tagging studies indicate that fish from all stocks range widely along the Atlantic Coast, generally remaining in state (0-3 miles) waters but in some areas entering the Exclusive Economic Zone (EEZ; 3-200 miles). Studies are presently underway, using Geographic Information Systems (GIS) analysis, to characterize the habitats used by striped bass when they are in nearshore waters during the summer, fall and winter months. Schools of striped bass which winter off

North Carolina use nearshore habitats from the surf zone to beyond the state-EEZ boundary line.

HAPC Designation from the [Atlantic Coast Diadromous Fish Habitat: A Review of Utilization, Threats, Recommendations for Conservation, and Research Needs: Chapter 9: Striped Bass](#) (page 297)

## Section II. Identification and Distribution of Habitat Areas of Particular Concern for Striped Bass

Since migratory striped bass are not a species managed jointly with a federal Fishery Management Council, and since there is no formal federal Fishery Management Plan for the species, Essential Fish Habitat (EFH) has not been formally described or designated. Therefore, the definition of a Habitat Area of Particular Concern (HAPC) is modified to be areas within the species' habitat that satisfy one or more of the following criteria: 1) provides important ecological function; 2) is sensitive to human-induced environmental degradation; 3) is susceptible to coastal development activities; or 4) is considered to be rarer than other habitat types. Any HAPC designated by the ASMFC for a species solely under its management is not subject to the consultant requirements of the Magnuson-Stevens Act. Any HAPC described for Atlantic migratory striped bass will be a subset of the habitats described in Section I. There are four habitat types that might qualify as HAPCs for Atlantic migratory striped bass, and they are discussed below.

Spawning sites occur in the freshwater portions of estuaries, or their tributaries, along the Atlantic coast. Such sites provide the critical ecological function of reproduction; are sensitive to anthropogenic impacts such as dam emplacement, nutrient and sediment loading, and pollution; are susceptible to navigational dredging and other coastal development activities; and are relatively small in extent and extremely rare in comparison to the areal extent of other migratory striped bass habitats.

Nursery areas are much broader in extent. These areas include the freshwater and low salinity portions of tributaries and their receiving estuaries for age 0 to 2 striped bass, and the higher salinity bays, estuaries, and the nearshore ocean for older juveniles. These sites provide the critical ecological function of growth to maturity; are sensitive to anthropogenic impacts such as navigational dredging and port development, sedimentation, toxic and hypoxic conditions, nutrient loading, and hypoxia; are highly susceptible to coastal development impacts from recreational and commercial vessel traffic, and receive all terrestrial runoff; and are limited in extent, although less rare than spawning habitats.

Inlets provide the only means of ingress and egress for striped bass adults and older juveniles migrating to and from riverine spawning and estuarine nursery habitats. They provide the critical ecological function of access to habitats necessary for reproduction and growth to maturity; they are sensitive to human-induced environmental degradation as a result of channel alterations, such as deepening and stabilization; they are all coastal and highly susceptible to coastal development activities, both commercial and recreational; and they are perhaps rarer (smaller in extent) than spawning habitats.

Finally, wintering grounds occur in the nearshore Atlantic Ocean from Long Island Sound south to at least Topsail Island, North Carolina. These habitats provide the critical ecological function of foraging and cover for adults most of the year; are sensitive to human-induced environmental degradation due to fishing activities, commercial navigation, offshore oil and gas exploration, and construction of offshore liquid natural gas (LNG) facilities; they are all coastal and subject to the aforementioned coastal development activities; and they are restricted to a relatively narrow band of nearshore ocean, although not as rare as spawning habitats and inlets.

### **Summer Flounder (*Paralichthys dentatus*)**

FMP Document: [Amendment 13 to the Summer Flounder, Scup and Black Sea Bass Fishery Management Plan](#)

Date of Approval/Designation: August 2002

Management by Council: **Jointly with Mid-Atlantic Fishery Management Council and in cooperation with New England Fishery Management Council and the National Marine Fisheries Service**

Complimentary FMP: **The FMP is a joint federal-state FMP**

#### **Comments on HAPC Designation**

The HAPC designation for summer flounder appears to meet the appropriate criteria, and also is a joint designation by the ASMFC and the Mid-Atlantic Fishery Management Council, as well as by NMFS. It may be that the ASMFC Habitat Committee needs to work with the Summer Flounder Technical Committee and Scup, Summer Flounder and Black Sea Bass Management Board to further refine the designation.

HAPC Designation from [Amendment 13 to the Summer Flounder, Scup and Black Sea Bass Fishery Management Plan](#) (pages 65-66)

### 3.2.5 Habitat Areas of Particular Concern (HAPC)

According to Section 600.815 (a)(9), FMPs should identify habitat areas of particular concern (HAPC) within EFH where one or more of the following criteria must be met: (i) ecological function, (ii) sensitive to human-induced environmental degradation, (iii) development activities stressing habitat type, or (iv) rarity of habitat.

The MAFMC identified SAV and macroalgae beds in the nursery habitats (for larvae and juvenile summer flounder) as HAPC because as is identified in the Packer and Griesbach document (page 41) “flounder appeared to utilize aquatic vegetation (eelgrass) as a ‘blind;’ i.e., they lie-in-wait along the vegetative perimeter, effectively capturing prey which moved from within the grass.” The report continues “in the absence of the eelgrass, the spot visually detected and avoided the flounder; the flounder therefore consumed fewer spot on average in the non-vegetated treatment than in the vegetated treatments.”

The MAFMC identified SAV and macroalgae beds as HAPC because of its ecological importance as shelter from predators, as well as in predation. Packer and Griesbach (1998) give an extensive review of the importance of SAV to juvenile and adult summer flounder. SAV has also been identified as refugia for juvenile and adult summer flounder, possibly important habitat for spawning summer flounder, important for prey of juvenile and possibly adult flounder (Laney 1997). Laney (1997) concluded that any loss of these areas along the Atlantic Seaboard may affect stocks. SAV as defined by ASMFC (1997) is rooted, vascular, flowering plants that, except for some flowering structures, live and grow below the water surface. In areas where SAV is absent, for example Delaware Bay, macroalgae can serve the same ecological function.

The specific designation of HAPC for summer flounder is as follows:

All native species of macroalgae, seagrasses, and freshwater and tidal macrophytes in any size bed, as well as loose aggregations, within adult and juvenile summer flounder EFH is HAPC. If native species of SAV are eliminated then exotic species should be protected because of functional value; however, all efforts should be made to restore native species.

The Council envisions that the designation of SAV as HAPC will give their recommendations on protecting SAV more weight during the consultation process. The Council can only regulate the activities of federal permit holder in state waters. The majority of the summer flounder, scup, and black sea bass commercial landings occurred in the EEZ in 1999 (Tables 12, 13, and 14). States are encouraged through the Commission to develop a concerted effort to protect SAV. The states of Virginia and Maryland are already considering actions.

## **Tautog (*Tautoga onitis*)**

FMP Document: **Fishery Management Plan for Tautog** (ASMFC Fishery Management Report No. 25)

Date of Approval/Designation: **April 1996** (FMP approval only; no designation)

Management by Council: **None**

Complementary FMP: **None**

**Comments on HAPC Designation**

The ASMFC Habitat Committee should work with the ASMFC Tautog Technical Committee and Tautog Management Board to develop and designate HAPC for tautog.

HAPC Designation
There is no HAPC designation for tautog. The FMP does contain sections on Habitat Considerations (pages 22-25) and Habitat Conservation and Restoration (pages 40-41).

**Weakfish (*Cynoscion regalis*)**

FMP Document: Amendment 4 to the Interstate Fishery Management Plan for Weakfish

Date of Approval/Designation: November 2002

Management by Council: At the request of ASMFC, the South Atlantic Fishery Management Council included management measures for weakfish bycatch reduction in the SAFMC FMP for the south Atlantic shrimp fishery (mandatory use of bycatch reduction devices in shrimp trawls. This management measure likely benefits other species in addition to weakfish (e.g., Atlantic croaker, spot and spotted seatrout).

**Comments on HAPC Designation**

The ASMFC Habitat Committee should work with the ASMFC Weakfish Technical Committee and Weakfish Management Board to develop a description of and designate HAPC for weakfish.

HAPC Designation
There is no designated HAPC for weakfish. The FMP (Amendment 4) contains Habitat Considerations on pages 12-14.

## **Winter Flounder (*Pseudopleuronectes americanus*), Gulf of Maine**

FMP Document: [Amendment 1 to the Interstate Fishery Management Plan for Inshore Stocks of Winter Flounder](#) (Fishery Management Report No. 43)

Date of Approval/Designation: **February 2005**

Management by Council: **Jointly with the New England Fishery Management Council** (which manages the offshore stocks) in consultation with the Mid-Atlantic Fishery Management Council and in cooperation with the National Marine Fisheries Service.

Complementary FMP: **The Northeast Multispecies FMP**, prepared by the New England Fishery Management Council in consultation with the Mid-Atlantic Fishery Management Council and in cooperation with the National Marine Fisheries Service.

### **Comments on HAPC Designation**

The winter flounder stock has been split into three populations for management purposes as noted in the FMP (Southern New England, Gulf of Maine, and Georges Bank and Offshore); however, the HAPC designation addresses the stock as a whole. The ASMFC Habitat Committee should work with the Winter Flounder Technical Committee, Winter Flounder Management Board, New England Fishery Management Council, and National Marine Fisheries Service in determining whether additional HAPC should be defined and designated for the separately-managed stocks.

HAPC Designation from [Amendment 1](#) (pages 18-20)

#### 1.4.1.2 Identification and Distribution of Habitat and Habitat Areas of Particular Concern

Habitat Areas of Particular Concern or HAPCs are discrete areas within an area designated as Essential Fish Habitat (EFH) under the Sustainable Fisheries Act that are particularly critical to the survival of the species. These are areas that provide important ecological functions and/or are especially vulnerable to degradation. HAPCs to satisfy one or more of the following criteria: 1) provide important ecological function; 2) are sensitive to human-induced environmental degradation; 3) are susceptible to coastal development activities; or 4) are considered to be rarer than other habitat types.

Habitat Areas of Particular Concern for estuarine populations of winter flounder fall into two categories: habitats used for spawning and nursery habitat.

#### Spawning and Nursery HAPC's

Estuarine dependent populations of winter flounder usually spawn in the upper estuary, in suitable coves and river mouths of the estuary. Spawning usually occurs in the shallow (<5 m)

areas and has been reported on various substrates including sand, silty sand, mud and gravel. However, it is important to note that this should not lead to the conclusion that they are not found on other substrates and which substrate is most critical varies by region. Howell and Molnar (1997) found in a study of winter flounder habitat preference along the Connecticut coast that “based on the rank order of densities within each year, spawning appears to occur most commonly in the “mouth” or mid to outer margin of small rivers and the middle reaches of larger harbors and rivers, where tidal and river currents counterbalance each other to create a “retention area” for the youngest and most vulnerable larval stages.” They also found that “in small rivers, this retention area may extend south of the river proper into near-shore embayments and areas surrounding islands. They felt that identification and conservation of these retention areas is important to the survival of winter flounder. In another study Crawford and Carey (1985) collected winter flounder eggs, attached to algal fronds from a submerged gravel bar in Point Judith Pond, Rhode Island. They also found eggs in the boundary region of the open/closed hydrodynamic system in this lagoon.

Nursery habitats (eggs, larvae, and juveniles through Age I habitats) are usually in or near spawning and settlement areas. Vegetated habitat like Submerged Aquatic Vegetation (SAV) and macroalgal beds also provide important nursery habitat for juveniles. Howell and Molnar (1997) suggest that when “larvae metamorphose to benthic juveniles the preferred habitat appears to shift from the river mouth up river.” They also found a positive relationship between juvenile density and mud sediments, especially those having bivalves (Howell et al. 1999). Goldberg et al (2002) looked at habitat preference in three estuaries, one in Connecticut and two in New Jersey and found highest densities of young-of-the-year (YOY) in unvegetated areas adjacent to eelgrass in the two NJ estuaries. In the CT estuary highest densities were found in eelgrass. Curren and Able (2002) found that shallow coves near ocean inlets are important settlement areas, with newly settled juveniles moving into other habitats shortly after settlement indicating that settlement habitats are only used temporarily before moving to nursery habitats.

Identifying HAPCs for adult winter flounder is more problematic. Habitat used by adult winter flounder moving into and out of the estuary to spawn and for post spawning foraging may also be considered an HAPC. Movement into and out of the estuary is regulated water temperature less than 15° C (MacPhee 1978). A tagging study by Powell (1988) found that migrating flounder move into Narragansett Bay by way of the deep channels. The study also found that spawning adults “hold” in deep channels and depressions prior to moving into the shoal areas to spawn.

The areas described above may be considered Habitat Areas of Particular Concern for egg, larval, juvenile and adult stages of winter flounder and are based on a limited number of studies found in the literature. Future studies may show other areas in a particular estuary to be HAPCs for winter flounder.

In summary, many HAPC’s for various life history stages of winter flounder are found in portions of the estuary where the highest anthropogenic impacts from human induced environmental degradation and coastal development are found. The loss or degradation of these habitats will have detrimental impacts on winter flounder populations in the estuaries.

Data from ASMFC member States that have identified and/or mapped HAPCs for winter flounder is provided in Appendix A.

Melissa: There apparently is a NEFMC HAPC designation offshore, which does address winter flounder. I think we need to add it here, but from the materials I found on the Internet, it isn't clear to me whether it has been implemented, or not. I need to do some more research on it before we add some text to this section and the one below.

### **Winter Flounder (*Pseudopleuronectes americanus*), Southern New England/Mid-Atlantic**

FMP Document: [Amendment 1 to the Interstate Fishery Management Plan for Inshore Stocks of Winter Flounder](#) (Fishery Management Report No. 43)

Date of Approval/Designation: **February 2005**

Management by Council: **Jointly with the New England Fishery Management Council** (which manages the offshore stocks) and in cooperation with the National Marine Fisheries Service.

Complementary FMP: **The Northeast Multispecies FMP**, prepared by the New England Fishery Management Council in consultation with the Mid-Atlantic Fishery Management Council and in cooperation with the National Marine Fisheries Service.

#### **Comments on HAPC Designation**

See the note above under the Winter Flounder Gulf of Maine stock account.

HAPC Designation

There is no separate HAPC designation for the Southern New England/Mid-Atlantic stock of winter flounder. The HAPC quoted above applies to both inshore stocks.

### 3.0 References

ASMFC's FMP documents for managed species are located on the Commission website:  
<http://www.asmfc.org/managedSpecies.htm>

**[I'm putting together the bibliography in a separate document]**

DRAFT

# ATLANTIC STATES MARINE FISHERIES COMMISSION

## 2017 Action Plan



Approved October 26, 2016

## **Goal 1 - Rebuild, maintain and fairly allocate Atlantic coastal fisheries**

Goal 1 focuses on the responsibility of the states to conserve and manage Atlantic coastal fishery resources for sustainable use. Commission members will advocate decisions to achieve the long-term benefits of conservation, while balancing the socio-economic interests of coastal communities. Inherent in this is the recognition that healthy and vibrant resources mean more jobs and more opportunity for those that live along the coast. The states are committed to proactive management, with a focus on integrating ecosystem services, socio-economic impacts, habitat issues, bycatch and discard reduction measures, and protected species interactions into well-defined fishery management plans. Fishery management plans will also address fair (equitable) allocation of fishery resources among the states. Understanding global climate change and its impact on fishery productivity and distribution is an elevated priority. Improving cooperation and coordination with federal partners and stakeholders can streamline efficiency, transparency, and, ultimately, success. In the next five years, the Commission is committed to making significant progress on rebuilding overfished or depleted Atlantic fish stocks.

### *Strategies to Achieve Goal*

- 1.1 Manage interstate resources that provide for productive, sustainable fisheries using sound science.

#### **American Eel**

Task 1.1.1 – Monitor Addendum IV commercial landings. Assist states in implementing and monitoring yellow eel quotas in 2017 if triggered.

Task 1.1.2 – Complete the 2017 stock assessment update and consider management response to the assessment findings.

Task 1.1.3 – Continue to work with Law Enforcement Committee (LEC) on monitoring poaching and illegal sale of glass eels (see Task 3.3.1).

Task 1.1.4 – Continue to collaborate on management and scientific activities with Great Lakes Fishery Commission, U.S Fish and Wildlife Service (USFWS), NOAA Fisheries, and Canada Department of Fisheries and Oceans (DFO). Explore collaboration with DFO on the next Benchmark Stock Assessment.

Task 1.1.5 – Monitor and respond if necessary to the classification of eel under the Convention on the International Trade of Endangered Species (CITES) and the International Union of Conservation of Nature (IUCN) Red List.

Task 1.1.6 – Work with the Technical Committee to finalize and implement a life cycle survey in the State of Maine to estimate incremental survival across life stages. Review

any additional life cycle survey proposals if submitted. Update the young of the year survey data.

Task 1.1.7 – Work with the Technical Committee and the Fish Passage Work Group to annually update the board on fish passage improvements and current issues including hydropower dam issues. States can use this information when leveraging partnerships to reduce passage impacts on eel and other anadromous species. (See Task 4.3.4)

Task 1.1.8 – Monitor fishery for consistency with management program and state compliance.

### **American Lobster and Jonah Crab**

#### ***American Lobster***

Task 1.1.9 – Finalize and implement Addendum XXV for the Southern New England (SNE) fishery to respond to the results of the 2015 benchmark stock assessment in Lobster Conservation Management Areas (LCMAs) 2, 3, 4, 5, and 6.

Task 1.1.10 – Develop and implement an addendum to improve catch and biological reporting in the lobster fishery.

Task 1.1.11 – Monitor trap reductions in SNE lobster fishery and implementation of addenda (XXII, XXIII, and XXV) to determine need and extent of further management action in the region.

Task 1.1.12 – Review analysis by Technical Committee on Gulf of Maine stock and determine need and extent of management action in the region.

Task 1.1.13 – Monitor Regional Fishery Management Councils actions on habitat area closures and implementation of the Atlantic national monument for impacts to the lobster fishery, respond if necessary.

Task 1.1.14 – Address lobster trap design, focusing on improvement to escapement of lobster from derelict traps. (See Task 2.4.5)

Task 1.1.15 – Monitor the use of the lobster trap database to track trap tag transfers.

Task 1.1.16 – Update the Atlantic Coastal Cooperative Statistics Program (ACCSP) Data Warehouse with landings information and monitor landings patterns in both the trap and non-trap fisheries.

Task 1.1.17 – Monitor trap tag production and distribution.

Task 1.1.18 – Continue to work with Offshore Lobster Law Enforcement Subcommittee to improve enforcement of offshore management measures, especially trap reductions.

Task 1.1.19 – Monitor fishery for consistency with management program and state compliance. Continue to work with the federal government to ensure consistency between regulations in state and federal waters, including trap banking measures in LCMAs 2 and 3 as outlined in Addenda XXI and XXII.

#### ***Jonah Crab***

Task 1.1.20 – Monitor Regional Fishery Management Councils actions on habitat area closures and implementation of the Atlantic national monument for impacts to the crab fishery, respond if necessary.

Task 1.1.21 – Finalize and implement Addendum II to the Jonah Crab FMP to ensure consistent regulations in the claw fishery in both state and federal waters.

Task 1.1.22 – Monitor fishery for consistency with management program and state compliance. Continue to work with the federal government to ensure consistency between regulations in state and federal waters.

#### **Atlantic Herring**

Task 1.1.23 – Review existing specifications for 2017-2018. Set Area 1A specifications for 2017.

Task 1.1.24 – Monitor activities of the New England Fishery Management Council (NEFMC) and the Mid-Atlantic Fishery Management Council (MAFMC) regarding complementary FMP actions, including but not limited to ecosystem-based fisheries management (EBFM), Amendment 8 issues and, river herring bycatch avoidance program. Consider complementary action where necessary (See Task 1.2.5).

Task 1.1.25 – Hold meetings as necessary to establish state effort control (days-out) programs for Areas 1A and 1B.

Task 1.1.26 – Review performance of the GSI<sub>30</sub>-Based Spawning Monitoring Pilot Program and consider use in future years.

Task 1.1.27 – Consider management action to meet the goals and objectives of the Area 1A fishery.

Task 1.1.28 – Participate on the NEFMC EBFM Plan Development Team to draft a Fishery Ecosystem Plan.

Task 1.1.29 – Monitor fishery for consistency with management program and state compliance.

**Atlantic Menhaden**

Task 1.1.30 – Continue work with the Technical Committee and Ecological Reference Points Working Group to develop ecosystem reference points based on Board-defined goals and objectives. (See Task 2.4.1). Hold a workshop to discuss and review potential ERPs to include in Draft Amendment 3, if identified by the Board as a priority and resources allow.

Task 1.1.31 – Finalize and implement Amendment 3 to revisit quota allocation and address ERPs.

Task 1.1.32 – Complete the 2017 stock assessment update and consider management response to the assessment findings.

Task 1.1.33 – Monitor the 2017 episodic events set aside quota and set the 2018 fishery specifications.

Task 1.1.34 – Monitor fishery for consistency with management program and state compliance.

**Atlantic Striped Bass**

Task 1.1.35 – Consider management response to 2016 stock assessment update, if necessary.

Task 1.1.36 – Initiate the development of the 2018 benchmark stock assessment to include fleet- and sex-specific analyses, as well as regional models.

Task 1.1.37 – Monitor fishery for consistency with management program and state compliance.

**Atlantic Sturgeon**

Task 1.1.38 – Finalize the 2017 benchmark stock assessment and consider management response, if necessary.

Task 1.1.39 – Transmit benchmark assessment findings to NOAA Fisheries for consideration in the 2017 5-year ESA status review.

Task 1.1.40 – Monitor state and federal activities in response to ESA listing of Atlantic sturgeon.

Task 1.1.41 – Monitor fishery for consistency with management program and state compliance.

**Bluefish**

Task 1.1.42 – Work in collaboration with Northeast Fisheries Science Center (NEFSC) to complete a stock assessment update. Consider management response to the update findings in conjunction with MAFMC, if necessary.

Task 1.1.43 – Review specifications for 2018 in cooperation with the MAFMC.

Task 1.1.44 – Monitor fishery for consistency with management program and state compliance.

**Coastal Sharks**

Task 1.1.45 – Establish specifications for 2018 and later.

Task 1.1.46 – Monitor and engage in the development of Amendment 5b (dusky shark management).

Task 1.1.47 – Review and consider dusky shark benchmark stock assessment for management and consider management response to the assessment findings.

Task 1.1.48 – Monitor activities of NOAA Fisheries and its Highly Migratory Species Division with regards to coastal shark management actions for consistency.

Task 1.1.49 – Monitor fishery for consistency with management program and state compliance.

**Horseshoe Crab**

Task 1.1.50 – Establish the 2018 specifications using the Adaptive Resource Management (ARM) Framework and quota allocation methodology.

Task 1.1.51 – Engage federal stakeholders, the biomedical community, and shorebird interest groups to secure long-term funding to support data collection for use in the ARM Framework, including the Horseshoe Crab Benthic Trawl Survey. (Task 6.2.3)

Task 1.1.52 – Engage the biomedical community toward finding a solution regarding confidential data use in order to enhance stock assessments and scientific advice for management.

Task 1.1.53 – Continue to develop the 2018 benchmark stock assessment.

Task 1.1.54 – Monitor red knot listing under the ESA.

Task 1.1.55 – Monitor fishery for consistency with management program and state compliance for both the bait and biomedical industries.

### **Northern Shrimp**

Task 1.1.56 – Complete the 2017 benchmark stock assessment and consider management response to the assessment findings.

Task 1.1.57 – Finalize and implement Amendment 3, which proposes measures to stabilize effort in the fishery and minimize catch of small shrimp.

Task 1.1.58 – Establish specifications for the 2017/2018 season. Consider industry test tows to collect biological data, if necessary and as resources allow.

Task 1.1.59 – Monitor fishery for consistency with management program and state compliance.

### **Shad and River Herring**

Task 1.1.60 – Complete the 2017 river herring stock assessment update.

Task 1.1.61 – Initiate development of the 2018 shad stock assessment update.

Task 1.1.62 – Monitor activities of the NEFMC and the MAFMC management actions including but not limited to shad and river herring catch caps and bycatch avoidance programs (see Task 1.2.5).

Task 1.1.63 – Review products of the River Herring Technical Expert Working Group and consider for management use.

Task 1.1.64 – Review and update sustainable fisheries plans and/or habitat plans as required by Amendment 3, if necessary.

Task 1.1.65 – Monitor fishery for consistency with management program and state compliance.

### **South Atlantic Species**

#### ***Atlantic Croaker***

Task 1.1.66 – Complete the 2017 benchmark stock assessment and consider management response to the assessment findings.

Task 1.1.67 – Monitor fishery for consistency with management program and state compliance.

#### ***Black Drum***

Task 1.1.68 – Monitor fishery for consistency with management program and state compliance.

***Cobia***

Task 1.1.69 – Develop and implement a Cobia FMP and work with the South Atlantic Fishery Management Council (SAFMC) and NOAA Fisheries to ensure complementary regulations between state and federal waters.

***Red Drum***

Task 1.1.70 – Consider management response to the 2016 assessment findings and the Technical Committee and Stock Assessment Working Group responses to the Board tasks following the assessment.

Task 1.1.71 – Monitor fishery for consistency with management program and state compliance.

***Spanish Mackerel***

Task 1.1.72 – Review annual report from North Carolina concerning Addendum I to the FMP. Consider changes to the management program, if necessary.

Task 1.1.73 – Monitor activities of the SAFMC to ensure consistency between state and federal management programs.

Task 1.1.74 – Monitor fishery for consistency with management program and state compliance.

***Spot***

Task 1.1.75 – Complete the 2017 benchmark stock assessment and consider management response to the assessment findings.

Task 1.1.76 – Monitor fishery for consistency with management program and state compliance.

***Spotted Seatrout***

Task 1.1.77 – Monitor fishery for consistency with management program and state compliance.

***Spiny Dogfish***

Task 1.1.78 – Review recent assessment information and establish specifications beginning in 2018/2019.

Task 1.1.79 – Participate in annual stock status update, as needed.

Task 1.1.80 – Monitor fishery for consistency with management program and state compliance.

### **Summer Flounder**

Task 1.1.81 – Continue development of the comprehensive summer flounder amendment, considering changes to both commercial and recreational management in coordination with MAFMC. Consider technical committee recommendations on climate change impacts on species distribution and allocation.

Task 1.1.82 – Develop and implement an addendum to consider a management approach for the recreational fishery in 2017 and beyond.

Task 1.1.83 – Finalize regulations for 2017 recreational fishery.

Task 1.1.84 – Review 2017-2018 specifications in collaboration with the MAFMC.

Task 1.1.85 – Work in collaboration with NOAA Fisheries and NEFSC to complete a stock status update. Support the development of a sex specific stock assessment modeling approach; monitor the progress of model development and engage as appropriate.

Task 1.1.86 – Monitor fishery for consistency with management program and state compliance.

### ***Scup***

Task 1.1.87 – Collaborate with MAFMC to on the next amendment if initiated by the Council in 2017.

Task 1.1.88 – Collaborate with NEFSC to complete a data update.

Task 1.1.89 – Finalize regulations for 2017 recreational fishery.

Task 1.1.90 – Review 2018 specifications in collaboration with the MAFMC.

Task 1.1.91 – Monitor fishery for consistency with management program and state compliance.

### ***Black Sea Bass***

Task 1.1.92 – Collaborate with MAFMC to consider management response to the 2016 benchmark assessment findings; modify 2017 specifications as needed and set 2108 specifications.

Task 1.1.93 – Finalize regulations for 2017 recreational fishery.

Task 1.1.94 – Develop and implement an addendum to consider recreational fishing measures for 2018 and beyond.

Task 1.1.95 – Monitor fishery for consistency with management program and state compliance.

**Tautog**

Task 1.1.96 – In response to the 2015 benchmark stock assessment, 2016 regional assessment and 2016 assessment update, finalize and implement management measures for Amendment 1, which proposes regional stock areas for management use, increased monitoring, and a commercial harvest tagging program.

Task 1.1.97 – Monitor fishery for consistency with management program and state compliance.

**Weakfish**

Task 1.1.98 – Continue Technical Committee work to evaluate sources of mortality.

Task 1.1.99 – Monitor fishery for consistency with management program and state compliance.

**Winter Flounder**

Task 1.1.100 – Monitor NEFSC stock assessment activities for inshore winter flounder stocks and review/modify specifications for 2018.

Task 1.1.101 – Continue to monitor federal common pool landings and regulations.

Task 1.1.102 – Work through the Northeast Regional Coordinating Council (NRCC) to improve communication between ASMFC, NEFMC, GARFO and the NEFSC to identify stock rebuilding opportunities.

Task 1.1.103 – Monitor fishery for consistency with management program and state compliance.

1.2 Strengthen state and federal partnerships to improve comprehensive management of shared fishery resources.

Task 1.2.1 – Participate on the East Coast Regional Fishery Management Councils and committees regarding matters of mutual interest.

Task 1.2.2 – Participate on the NRCC and SouthEast Data, Assessment and Review Steering Committee to set state/federal management and assessment priorities.

Task 1.2.3 – Work with the Regional Fishery Management Councils and NOAA Fisheries to improve alignment between state and federal fishery management programs.

Task 1.2.4 – Work with the Regional Fishery Management Councils and NOAA to review the guidance on Changes to National Standard 1.

Task 1.2.5– Work with NOAA Headquarters and regional leadership to improve alignment of state/federal budget priorities.

Task 1.2.6 – Continue to work with NEFMC and MAFMC on evaluating and mitigating shad and river herring bycatch. (See Task 1.1.55)

Task 1.2.7 – Continue to work with NEFMC and MAFMC on habitat amendments and impacts to the American lobster and Jonah crab fisheries.

1.3 Adapt management to address emerging issues.

Task 1.3.1 – Continue to monitor developments related to climate change, ocean acidification, stock distributions, ecosystem services, ocean planning and potential fisheries reallocations.

Subtask 1.3.1.1 – Convene the Climate Change Working Group to develop white paper addressing fisheries impacted by climate change.

Task 1.3.2 – Consider approval of Risk and Uncertainty Work Group draft policy for management implementation.

1.4 Practice efficient, transparent, and accountable management processes.

Task 1.4.1 – Continue to track status of stocks relative to biological reference points to evaluate and drive improvement and results in the Commission’s fisheries management process.

Task 1.4.2 – Continue the use of decision documents and working groups to structure Board discussion on complex management decisions and increase transparency of pending board action.

Task 1.4.3 – Continue to focus Board attention on developing clear problem statements prior to initiating management changes.

Task 1.4.4 – Continue to use roll call voting procedures for Commission final actions.

1.5 Evaluate progress towards rebuilding fisheries.

Task 1.5.1 – Conduct annual Commissioner assessment of progress towards achieving the Commission’s mission, vision, and goals using an on-line survey. Report findings to the ISFMP Policy Board.

Task 1.5.2 – Continue the use of the annual performance of the stock to evaluate species rebuilding progress. Report findings to the ISFMP Policy Board.

Subtask 1.5.2.1 – Establish a Policy Board Working Group to consider options to more effectively review progress in achieving the Commission’s vision.

1.6 Strengthen interactions and input among stakeholders, technical, advisory, and management groups.

Task 1.6.1 – Engage American lobster, Jonah crab, summer flounder, black sea bass, horseshoe crab, South Atlantic species, tautog, menhaden and northern shrimp advisory panels (APs) in the development of FMPs and Amendments. Solicit state membership of current active APs and appoint new membership where necessary.

Task 1.6.2 – Review advisory panel guiding documents including chair term limits.

Task 1.6.3 – Continue communication with non-active advisory panels (species in the maintenance mode).

Task 1.6.4 – Integrate non-traditional constituents into Advisory Panels (See Task 5.2.3).

## **Goal 2 – Provide the scientific foundation for and conduct stock assessments to support informed management actions**

Sustainable management of fisheries relies on accurate and timely scientific advice. The Commission strives to produce sound, actionable science through a technically rigorous, independently peer-reviewed stock assessment process. Assessments are developed using a broad suite of fishery-independent surveys and fishery-dependent monitoring, as well as research products developed by a vast network of fisheries scientists at state, federal, and academic institutions along the coast. The goal encompasses the development of new, innovative scientific research and methodology, and the enhancement of the states’ stock assessment capabilities. It provides for the administration, coordination, and expansion of collaborative research and data collection programs. Achieving the goal will ensure sound science is available to serve as the foundation for the Commission’s evaluation of stock status and adaptive management actions.

### *Strategies to Achieve Goal*

2.1 Conduct stock assessments based on comprehensive data sources and rigorous technical analysis.

Task 2.1.1 – Address data deficiencies and priorities for stocks with limited data or stocks of unknown status. Collect more comprehensive information for data poor stocks in order to transition from problematic to more certain assessment models. Focal areas

include sciaenid bycatch data, black sea bass fishery-independent data, menhaden fishery-independent data, river herring at-sea and in-river monitoring, the horseshoe crab trawl survey, improved tautog indices, black drum biological sampling and fishery-independent monitoring of mature fish, American eel surveys covering all life stages, and red drum recreational discard size composition. Conduct Jonah crab tagging study to evaluate migration, stock connectivity and growth. *(Supported by NOAA Cooperative Agreement).*

Task 2.1.2 – Complete benchmark stock assessments for Atlantic croaker, Atlantic sturgeon, northern shrimp and spot. Complete assessment updates for river herring, Atlantic menhaden, American eel, bluefish scup, black sea bass, and summer flounder.

Task 2.1.3 – Conduct independent peer reviews of the Atlantic sturgeon, northern shrimp, and spot and croaker stock assessments.

Task 2.1.4 – Conduct additional workshops with South Atlantic states to complete a southern flounder regional stock assessment (if funding is available).

Task 2.1.5 – Through the Assessment Science Committee (ASC) and Management and Science Committee (MSC), develop the long-term stock assessment schedule to prioritize stocks by management need; present tradeoffs to the Policy Board when assessment scheduling changes are requested.

Task 2.1.6 – Track assessment scientists' workloads in order to complete 2017-2018 stock assessments; using the guidance of the ASC, develop new policies and approaches to better match assessment demand with assessment scientists' capacity.

Task 2.1.7 – Through the ASC, conduct a Data Best Practices Workshop and expand Fishery-Independent Survey Database to promote efficient assessment report compilation.

Task 2.1.8 – Serve as members of the Atlantic Sturgeon, Atlantic Menhaden, American Eel, Northern Shrimp, Tautog, Bluefish, Horseshoe Crab, River Herring and Shad Technical Committees and Stock Assessment Subcommittees to assist in completion of benchmark assessments and annual assessment updates. Utilize the ASC for guidance with assessment methods as necessary.

Task 2.1.9 – Continue to work with state and federal stock assessment scientists and staff of the ACCSP to increase use of ACCSP data in the Commission's technical work.

Task 2.1.10 – Through the Risk and Uncertainty Policy Workgroup, finalize a Commission policy regarding risk and uncertainty, and provide to the ISFMP Policy Board for consideration and approval (See Task 1.3.2).

Task 2.1.11 – Conduct a Commissioner workshop on management risk and uncertainty.

2.2 Proactively address research priorities through cooperative state and regional data collection programs and collaborative research projects

Task 2.2.1 – Update the master list of ASMFC Research Priorities by species as benchmark assessments are completed and new priorities emerge; distribute Research Priorities to the states, NOAA Fisheries, USFWS, and university researchers.

Task 2.2.2 – Organize a Sea Grant Workshop with research directors from the Atlantic states’ Sea Grant programs to identify common research priorities and pursue funding opportunities (if funding is available).

Task 2.2.3 – Participate in proposal reviews for NMFS Cooperative Research Programs, Saltonstall-Kennedy, Research Set-Aside, NFWF, ACCSP, MARFIN, and MARMAP, when requested, to evaluate projects and monitor new research activities to promote the states’ needs.

Subtask 2.2.3.1 – Develop and communicate research priorities for review and approval by species management boards.

Subtask 2.2.3.2 – Work with federal partners to ensure completed funded projects are reviewed and transmitted to technical committees and boards.

Subtask 2.2.3.3 – Monitor and participate in the MAFMC redesign of the Research Set-Aside Program (RSA) to ensure state interests are incorporated.

Task 2.2.4 – Communicate with the National Fish and Wildlife Foundation (NFWF) on shared research priorities and funding opportunities (e.g., fish passage, catch shares). Participate in NFWF proposal reviews for the Fisheries Innovation Fund.

Task 2.2.5 – Participate on the ACCSP’s Coordinating Council, Operations Committee, Bycatch Prioritization Committee, Biological Review Panel, Recreational and Commercial Technical Committees, Outreach Committee and the Computer Technical Committee.

Subtask 2.2.5.1 – Submit ASMFC changes to the ACCSP Biosampling Prioritization Matrix. Consult Fishing Gear Technology Work Group regarding ASMFC input to Bycatch Prioritization Matrix.

Task 2.2.6 – Coordinate and implement the Northeast Area Monitoring and Assessment Program (NEAMAP).

Subtask 2.2.6.1 – Administer funding to conduct 2017 NEAMAP Nearshore Trawl Surveys (Mid-Atlantic, Maine/New Hampshire).

Subtask 2.2.6.2 – Develop and implement strategy to detail future funding needs in order to address annual funding shortfalls for the Mid-Atlantic/Southern New England and Maine/New Hampshire Trawl Surveys.

Subtask 2.2.6.2 – Support continuation of the NEAMAP Nearshore Trawl Surveys through coordination with survey leads and all NEAMAP committees: NEAMAP Board, Operations, Data Management, Analytical, and Trawl Technical Committees

Subtask 2.2.6.3 – Conduct NEAMAP Summit to improve coordination among the committees, assess need for changes in program structure and committee functions.

Subtask 2.2.6.4 – Develop the 2017 NEAMAP Operations Plan.

Subtask 2.2.6.5 – Provide NEAMAP data to coastwide stock assessments; track and demonstrate data use, and report to the ISFMP Policy Board, NEFSC, and Congress; maintain the NEAMAP website as a tool for distributing program information and requesting data.

Task 2.2.7 – Coordinate the South Atlantic component of the Southeast Area Monitoring and Assessment Program (SEAMAP).

Subtask 2.2.7.1 – Coordinate all research components of SEAMAP-South Atlantic: Coastal Trawl Survey, Coastal Longline Surveys, Pamlico Sound Survey, Reef Fish Survey, Southeast Regional Taxonomic Center, and the Cooperative Winter Tagging Cruise. Coordinate all current workgroups including the Bottom Mapping, Fish Habitat Characterization and Assessment, Data Management, Crustacean, Coastal Trawl Survey, and the Coastal Longline Survey Workgroups.

Subtask 2.2.7.2 – Implement the new 5-year SEAMAP Management Plan (2016-2020); track and demonstrate data use for coastwide stock assessments, and report to the South Atlantic Board and Congress; maintain the SEAMAP website hosted by ASMFC.

Subtask 2.2.7.3 – Participate in the expansion of SEAMAP-South Atlantic fishery-independent data coordination and mapping, as resources allow.

Subtask 2.2.7.4 – Coordinate South Atlantic activities with the Gulf and Caribbean components of SEAMAP.

Task 2.2.8 – Continue the Tagging Certification Program and support the use of tagging data in ASMFC stock assessments. Develop tagging registration programs, update and maintain the tagging resource website, link acoustic tagging information to the Atlantic Coastal Tagging (ACT) network website to improve the efficiency and quality of tagging efforts along the coast; secure telemetry tagging data for use in assessments.

Task 2.2.9 – Develop long-term strategy for collecting striped bass tagging data, including funding, administration, and at-sea support. Continue multi-estuary striped

bass telemetry study to determine migration rates and relative contributions to the coast wide stock. *(Supported by NOAA Cooperative Agreement)*.

Task 2.2.10 – Continue to participate in the development and implementation of the Marine Recreational Information Program (MRIP), with ASMFC staff serving on Executive Steering Committee, Operations Team, Transition Team, and Angler Registry Team. Report progress to the ISFMP Policy Board, and scientific oversight committees (MSC, ASC).

Subtask 2.2.10.1 – Participate in development of MRIP Strategic Plan.

Subtask 2.2.10.2 – Participate in MRIP new effort survey review and time series calibration for use in upcoming stock assessments and potential changes to management.

Subtask 2.2.10.3 – Continue to highlight concerns regarding delays in releases of Wave data and final annual estimates.

Task 2.2.11 – Coordinate fish ageing activities among Atlantic coast states and university laboratories in order to provide consistent, accurate age data to stock assessments.

Subtask 2.2.11.1 – Complete the age sample exchange and conduct an ageing workshop for American eel to prepare laboratories for providing new age data consistent with historical age data.

Subtask 2.2.11.2 – Conduct an annual Ageing Quality Control Workshop using age sample reference collections for multiple species to maintain consistency among state and university ageing technicians.

Subtask 2.2.11.3 – Continue cooperative angler carcass donation programs with the states to collect age samples toward improving age data for assessments.

Subtask 2.2.11.4 – Continue coast wide black drum age sampling to address the deficiency in age data from older fish, for use in future stock assessments. *(Supported by NOAA Cooperative Agreement)*

Subtask 2.2.11.5 – Distribute to all ageing labs the finalized Atlantic and Gulf coasts fish ageing manual with fish ageing protocols; participate in joint coasts ageing manual workshops with GSMFC

Task 2.2.12 – Continue coordination of the ASMFC Observer Trips add-ons for Mid-Atlantic small-mesh otter trawl fisheries through the Northeast Fishery Observer Program (NEFOP). Evaluate Observer add-on impacts in collaboration with target species' assessment scientists and NEFOP.

Task 2.2.13 – Coordinate the activities of the Committee on Economics and Social Sciences (CESS).

Subtask 2.2.13.1 – Develop and provide basic socioeconomic information for inclusion in fishery management plans, amendments, and addenda.

Subtask 2.2.13.2 – Provide technical recommendations to the social and economic data collection and data management programs of the ASMFC and ACCSP.

Subtask 2.2.13.3 – Serve as a steering committee for ASMFC socioeconomic studies.

Subtask 2.2.13.4 – Provide guidance and translation of data from the Atlantic menhaden socioeconomic study to Atlantic Menhaden PDT during the development of Amendment 3.

2.3 Facilitate stakeholder involvement in research initiatives and the stock assessment process.

Task 2.3.1 – Seek stakeholder input at data workshops during development of stock assessments. Continue to issue press releases calling for new data when new assessments begin.

Task 2.3.2 – Promote scientifically sound tagging practices and certification of angler-based tagging programs through the Interstate Tagging Committee.

Task 2.3.3 – Develop outreach materials that highlight opportunities for public engagement in the Commission’s fisheries management and stock assessment processes. (See Task 5.2.4)

Task 2.3.4 – Track progress of citizen science initiatives through the SAFMC and other entities.

2.4 Promote data collection and research to support ecosystem-based management

Task 2.4.1 – Ecological Reference Points Workgroup: continue to develop ecosystem-based reference points that align with Board-approved management objectives for Atlantic menhaden. (See Task 1.1.27)

Task 2.4.2 – Continue to improve multispecies modeling efforts to support single-species assessments, including development of a new multispecies statistical catch-at-age model.

Task 2.4.3 – Identify opportunities to collaborate with state, federal, and university researchers to use existing data collection platforms to advance ASMFC ecosystem models (e.g. diet studies, surveys of spawning and nursery habitats).

Task 2.4.4 – Through the MSC, track the development of state and federal activities related to climate change and impacts to fisheries; provide updates to the Policy Board and Commissioner Work Group (See Task 1.3.1.1)

Task 2.4.5 – Convene the Fishing Gear Technology Work Group (FGTWG) to evaluate the efficacy of bycatch reduction devices in southern shrimp trawl fisheries to reduce Sciaenid bycatch; conduct FGTWG evaluation of the efficacy of lobster trap design to ensure escapement from derelict gear. (See Task 1.1.11)

Task 2.4.6 – Participate as members of the Chesapeake Bay Sustainable Fisheries Goal Implementation Team and Forage Fish Workgroup.

2.5 Provide stock assessment training to improve the expertise and involvement of state and staff scientists.

Task 2.5.1 – Conduct intermediate and advanced stock assessment methods training workshops.

Task 2.5.3 – Support external stock assessment training opportunities for staff and state scientists.

### **Goal 3 – Promote compliance with fishery management plans to ensure sustainable use of Atlantic coast fisheries**

Fisheries managers, law enforcement personnel, and stakeholders have a shared responsibility to promote compliance with fisheries management measures. Activities under the goal seek to increase and improve compliance with fishery management plans. This requires the successful coordination of both management and enforcement activities among state and federal agencies. Commission members recognize that adequate and consistent enforcement of fisheries rules is required to keep pace with increasingly complex management activity and emerging technologies. Achieving the goal will improve the effectiveness of the Commission’s fishery management plans.

#### *Strategies to Achieve Goal*

3.1 Develop practical compliance requirements that foster stakeholder buy-in.

Task 3.1.1 – Identify and explore fishery management measures that maximize stakeholder buy-in.

Task 3.1.2 – Evaluate and report on compliance issues associated with newly implemented regulatory measures for American lobster, tautog, Jonah crab or other ASMFC-managed species as requested.

Task 3.1.3 – Assist MAFMC in identifying strategies to address violations and illegal harvest involved in RSA programs (if requested).

Task 3.1.4 – Continue working with the Tautog Enforcement Subcommittee to review and evaluate the effectiveness of commercial tagging systems and user acceptance (if adopted).

3.2 Evaluate the enforceability of management measures and the effectiveness of law enforcement programs.

Task 3.2.1 – Work with LEC Coordinator to ensure the input of the LEC throughout the management process on the enforceability of management options proposed in FMPs, amendments, addenda and conservation equivalency proposals.

Task 3.2.2 – Incorporate and reference the revised “Guidelines for Resource Managers” in reviews and evaluations of proposed changes to management programs.

Task 3.2.3 – Report on the enforceability of existing FMPs as part of the annual compliance review for each species.

Task 3.2.4 – Engage and support NMFS and USFWS Offices of Law Enforcement, U.S. Department of Justice and U.S. Coast Guard to facilitate the enforceability of Commission FMPs.

Task 3.2.5 – Exchange information and best practices related to the enforcement of protected and endangered species regulations.

Task 3.2.6 – Annually review and comment on (as needed) NMFS enforcement priorities to ensure they support the enforceability and effectiveness of Commission management programs.

3.3 Promote coordination and expand existing partnerships with state and federal natural resource law enforcement agencies.

Task 3.3.1 – Provide a forum to promote and facilitate interjurisdictional enforcement operations targeting specific fishery resources (e.g. Atlantic striped bass, tautog, American eel). (See Task 1.1.2)

Task 3.3.2 – Maintain communications with the law enforcement advisory committees of the regional fishery management councils, interstate commissions, and other conservation organizations to seek opportunities for collaboration and ensure consistent law enforcement strategies.

Task 3.3.3 – Exchange information regarding planned and ongoing enforcement actions and facilitate communications regarding joint efforts that can assist in long-term fisheries enforcement.

Task 3.3.4 – Share enforcement techniques and law enforcement success stories and provide regional training sessions (if resources allow) to enhance law enforcement efficiency along the Atlantic coast.

Task 3.3.5 – Share information and resources for locating and obtaining enforcement related grants.

Task 3.3.6 – Advance the recommendations of the American Lobster Enforcement Subcommittee to enhance cooperative funding and enforcement activities for commercial fisheries in nearshore and offshore waters.

Task 3.3.7 – Review and evaluate inter-agency measures to enhance tracking of fishery shipment and sale across jurisdictional boundaries.

Task 3.3.8 – Advance any recommendations of the Aerial Enforcement Subcommittee that would support or enhance existing state-federal enforcement for ASMFC-managed species.

3.4 Enhance stakeholder awareness of management measures through education and outreach.

Task 3.4.1 – Continue to highlight the outcomes of law enforcement investigations (penalties and fines) through various outreach tools (website, social media, press releases, fact sheets).

3.5 Use emerging communication platforms to deliver real time information regarding regulations and the outcomes of law enforcement investigations.

Task 3.5.1 – Report on enforcement issues associated with differing federal, interstate, and state regulations using social media and timely press releases.

Task 3.5.2 – Provide forum for enforcement agencies to display successful development and use of enforcement technologies.

#### **Goal 4 – Protect and enhance fish habitat and ecosystem health through partnerships and education**

Goal 4 aims to conserve and improve coastal, marine, and riverine habitat to enhance the benefits of sustainable Atlantic coastal fisheries and resilient coastal communities in the face of changing ecosystems. Habitat loss and degradation have been identified as significant factors affecting the long-term sustainability and productivity of our nation’s fisheries. The

Commission's Habitat Program develops objectives, sets priorities, and produces tools to guide fisheries habitat conservation efforts directed towards ecosystem-based management.

The challenge for the Commission and its state members is maintaining fish habitat in the absence of specific regulatory authority for habitat protection or enhancement. Therefore, the Commission will work cooperatively with state, federal, and stakeholder partnerships to achieve this goal. The Commission and its Habitat Program endorses the National Fish Habitat Partnership, and will continue to work cooperatively with the program to improve aquatic habitat along the Atlantic coast. Since 2008, the Commission has invested considerable resources, as both a partner and administrative home, to the Atlantic Coastal Fish Habitat Partnership (ACFHP), a coastwide collaborative effort to accelerate the conservation and restoration of habitat for native Atlantic coastal, estuarine-dependent, and diadromous fishes.

### *Strategies to Achieve Goal*

#### 4.1 Identify critical habitat through fisheries management programs and partnerships.

Task 4.1.1 – Review existing reference documents for Commission managed species to identify gaps or updates needed to describe important habitat types.

Task 4.1.2 – Review and revise species habitat factsheets as new data become available.

Task 4.1.3 – Coordinate artificial reef activities among the Atlantic coast states, and between the Atlantic and Gulf States Marine Fisheries Commissions.

Task 4.1.4 – Co-sponsor Artificial Reefs Symposium at AFS 2017 in Tampa; support participation by selected state Artificial Reef Committee members and staff Coordinator.

#### 4.2 Educate Commissioners, stakeholders, and the general public about the importance of habitat to healthy fisheries and ecosystems.

Task 4.2.1 – Facilitate coordination and distribution of information for ecosystem-based management and marine protected area activities, and the potential consequences of significant anthropogenic activities on habitats of concern.

Task 4.2.2 – Participate in regional and national habitat meetings and scientific conferences to facilitate increased communication with agencies and programs that have jurisdiction over habitat.

Task 4.2.3 – Publish annual issue of *Habitat Hotline Atlantic*.

Task 4.2.4 – Review and update the Habitat Management Series: *Living Shorelines and Submerged Aquatic Vegetation* for ISFMP Policy Board review and acceptance. Identify a subsequent topic (e.g. climate change, sand mining, power plant impingement, document, innovative wetland restoration techniques).

4.3 Engage local, state, and regional governments in mutually beneficial habitat protection and enhancement programs through partnerships.

Task 4.3.1 – Work with ACFHP to foster partnerships with like-minded organizations at local levels to further common habitat goals.

Task 4.3.2 – Provide stakeholders with the tools to effectively communicate, promote and accomplish habitat protection, restoration, and enhancement programs at the local level.

Task 4.3.3 – Serve as a point of contact and information conduit at the Commission for energy-related issues affecting fish habitat.

Task 4.3.4 – Coordinate the activities of the Fish Passage Working Group (FPWG) to carry out priority tasks as defined by the ISFMP Policy Board. Promote development of effective fish passage approaches and projects through state and federal collaboration.

Subtask 4.3.4.1 – Maintain a coastwide database of dams, dam removals, fishways, and passage efficiency studies. Collaborate with NGOs to incorporate the database in their passage prioritization tools.

Subtask 4.3.4.2 – Implement the fish passage prioritization protocol, maintain a coastwide list of passage project priorities, and develop performance criteria to evaluate passage projects' success.

Subtask 4.3.4.3 – Establish coastwide fish passage targets and add to diadromous species FMPs as amendments/addenda are developed; assist in developing targets for the Federal Energy and Regulatory Commission (FERC) relicensing on the Santee-Cooper River system.

Subtask 4.3.4.4 – Monitor and participate in upcoming FERC relicensing projects; develop guidance for state staff for navigating the FERC dam relicensing process, in order to more effectively improve passage in relicensing prescriptions.

Subtask 4.3.4.5 – Summarize and distribute results of survey describing positive and negative consequences of providing fish passage through consultation with the diadromous technical committees.

Subtask 4.3.4.6 – Respond to state requests for information on fish passage, including FERC relicensing issues, fishway design, and restoration/escapement guidelines.

Task 4.3.5 – Continue to provide coordination support for ACFHP, under the direction of the National Fish Habitat Action Plan (NFHAP) Board.

Subtask 4.3.5.1 – Facilitate communication and outreach with ACFHP partners, overlapping partnerships, and new partners. Develop outreach materials and maintain the ACFHP website.

Subtask 4.3.5.2 – Coordinate the implementation of the 5-year ACFHP Conservation Strategic Plan, including development of an Implementation Plan outlining tasks by year to achieve the goals, objectives, and actions in the Strategic Plan.

Subtask 4.3.5.3 – Support the completion of priority ACFHP Science and Data projects - acquire and analyze fish population, habitat, and human impact data for the Southeast and Northeast using GIS mapping; make results available to Partners for the purpose of strategic coastal habitat conservation.

Subtask 4.3.5.4 – Through ACFHP, and in cooperation with other Fish Habitat Partnerships and the National Fish Habitat Board, work with partners to identify and implement monitoring and data standards for assessment of coastal habitat condition and fishery resource status prior to and following alteration projects.

Subtask 4.3.5.5 – Assist in obtaining future funding to support ACFHP operations and fish habitat conservation projects.

4.4 Foster partnerships with management agencies, researchers, and habitat stakeholders to leverage regulatory, political, and financial support.

Task 4.4.1 – Provide information or comment on Atlantic coast projects and permits in accordance with ASMFC project review protocol.

Task 4.4.2 – Solicit funding and promote fish habitat research through diverse activities including partnerships, funding opportunities, workshops, identification of research needs and other strategies.

Task 4.4.3 – Identify partnership opportunities and forge additional relationships with organizations – such as non-governmental organizations and the recreational fishing community – to facilitate the promotion of fish habitat through a collaboration of strengths of different stakeholder groups.

Task 4.4.5 – Seek improvements to habitat webpages, continue to use social media to connect with regional and local decision makers, and otherwise more effectively disseminate the work of the Habitat Committee.

4.5 Identify mechanisms to evaluate ecosystem health.

Task 4.5.1 – Review habitat program goals and evaluate accomplishments annually.

Task 4.5.2 – Work with state and federal agencies, the Councils, and non-governmental organizations to build on existing coastwide GIS efforts, to identify important fish habitats for Commission managed species as defined in the ACFHP Species-Habitat matrix.

4.6 Engage in state and federal agency efforts to ensure climate change response strategies are included in habitat conservation efforts.

Task 4.6.1 – As revisions to habitat sections of FMPs are made include recommendations that account for climate change in fisheries management decisions.

Task 4.6.2 – Identify gaps in state coastal regulatory planning regarding climate change impacts and make recommendations to increase resiliency.

Task 4.6.3 – Increase communication on ecosystem based management with Commission committees to find overlap with fish habitat related issues.

### **Goal 5 – Strengthen stakeholder and public support for the Commission**

Stakeholder and public acceptance of Commission decisions are critical to our ultimate success. For the Commission to be effective, these groups must have a clear understanding of our mission, vision, and decision-making processes. The goal seeks to do so through expanded outreach and education efforts about Commission programs, decision-making processes, and its management successes and challenges. It aims to engage stakeholders in the process of fisheries management, and promote the activities and accomplishments of the Commission. Achieving the goal will increase stakeholder participation, understanding, and acceptance of Commission activities.

#### *Strategies to Achieve Goal*

5.1 Increase public understanding and support of activities through expanded outreach at the local, state, and federal levels.

Task 5.1.1 – Publish bi-monthly issues of *Fisheries Focus*. Continue to reduce mailing/printing costs through greater electronic distribution.

Task 5.1.2 – Use website to promote ASMFC activities to state and federal partners and stakeholders.

Task 5.1.3 – Promote ASMFC through attendance at fisheries-related trade shows and conferences.

Task 5.1.4 – Promote Commission activities regarding recently assessed and/or high profile species, habitat and law enforcement activities, as well as emerging issues such as fishery allocations and shifting populations due to climate change, to a broader constituency through mechanisms such as targeted press releases, informational brochures, webpage highlights and conference/trade show participation.

Task 5.1.5 – Develop and distribute youth-based educational materials designed to increase awareness of fisheries science and understating of fisheries management to key venues (e.g., teacher kits, Eco-camps, charter boat operations, aquatic educators) to help promote marine stewardship and ocean literacy.

Task 5.1.6 – Collaborate with East Coast Aquaria (New England, Baltimore, North Carolina, Virginia) and relevant partners to promote interstate fisheries management and science activities at the aquaria.

Task 5.1.7 – Promote Commission’s mission and programs through outreach meetings with various marine policy and marine science graduate programs.

Task 5.1.8 – Participate in the Mid-Atlantic and New England Fishery Management Councils Marine Resource Education Program.

Task 5.1.9 – Prepare brief, simplified stock assessment overview presentations for posting on YouTube and ASMFC Fisheries Science 101 webpage for black sea bass and Atlantic sturgeon.

Task 5.1.10 – Explore use of story mapping and photo journaling to better communicate science and management activities. (click on the following links to see examples - <http://www.arcgis.com/apps/MapJournal/index.html?appid=7530f28f065c486ba0420ca8e26a13f4>; <http://portal.midatlanticocean.org/ocean-stories/new-recreational-data-covers-coast/>; <https://noaa.maps.arcgis.com/apps/MapSeries/index.html?appid=728a6cc901f44845be430faa21151535>)

**Task 5.1.11 - Solicit outside sources to develop short video clips of fisheries management and science activities.**

5.2 Clearly define Commission processes to facilitate stakeholder participation, as well as transparency and accountability.

Task 5.2.1 – Publish and distribute 2016 Annual Report to Congress, state legislators, and stakeholders to provide overview of our activities and progress in carrying out the Commission’s mission and public trust responsibilities.

Task 5.2.2 – Prepare Stock Assessment Overviews (in layman’s terms) for benchmark and stock assessment updates to facilitate stakeholder understanding of the science behind our management decisions. Focal species for 2017 are black sea bass, Atlantic

croaker, red drum, spot, Atlantic sturgeon, northern shrimp, Atlantic menhaden, and river herring.

Task 5.2.3 – Enhance engagement in advisory panels and through solicitation of new members and increased participation of existing members (See Tasks 1.6.1 and 1.6.3).

Task 5.2.4 – Develop outreach materials that highlight opportunities for public engagement in the Commission’s fisheries management and stock assessment processes. (See Task 2.3.3)

Task 5.2.5 – Develop a fisheries management 101 page for the website.

5.3 Strengthen national, regional, and local media relations to increase coverage of Commission actions.

Task 5.3.1 – Track media communications and coverage through ASMFC-related news clippings and media tracking sheet.

Task 5.3.2 – Conduct a training workshop for science and ISFMP staff on story mapping and photo journaling to expand staff skill set and enhance communication tools.

Task 5.3.3 – Conduct annual meeting of Atlantic Coast Fisheries Communication Group, comprised of Public Information Officers from the Councils, states and federal agencies, to share successful tools, identify key media contacts and work cooperatively on joint projects.

5.4 Use new technologies and communication platforms to more fully engage the broader public in the Commission’s activities and actions.

Task 5.4.1 – Use social media tools to increase ASMFC visibility and improve stakeholder engagement.

Task 5.4.2. – Use website capabilities (e.g., video clips) to promote Fisheries Science 101 webinars, videos of fisheries surveys and state on-the-ground projects.

Task 5.4.3 – Monitor the success of website and social media platforms in reaching broader constituency and effectively communicating ASMFC mission, programs and activities.

**Goal 6 – Advance Commission and member states’ priorities through a proactive legislative policy agenda**

Although states are positioned to achieve many of the national goals for marine fisheries through cooperative efforts, state fisheries interests are often underrepresented at the national level. This is due, in part, to the fact that policy formulation is often disconnected from the processes that provide the support, organization, and resources necessary to

implement the policies. The capabilities and input of the states are an important aspect of developing national fisheries policy, and the goal seeks to increase the states' role in national policy formulation. Additionally, the goal emphasizes the importance of achieving management goals consistent with productive commercial and recreational fisheries and healthy ecosystems.

The Commission recognizes the need to work with Congress in all phases of policy formulation. Several important fishery-related laws will be reauthorized over the next couple of years (i.e., Atlantic Coastal Act, Magnuson-Stevens Fishery Conservation and Management Act, Interjurisdictional Fisheries Act, Atlantic Striped Bass Conservation Act, and Anadromous Fish Conservation Act). The Commission will be vigilant in advocating the states' interests to Congress as these laws are reauthorized and other fishery-related pieces of legislation are considered.

### *Strategies to Achieve Goal*

6.1 Increase the Commission's profile and support in the U.S. Congress by developing relationships between Members and their staff and Commissioners, the Executive Director, and Commission staff.

Task 6.1.1 – Provide opportunities for in person Commissioner interactions with Members and congressional staff during Meeting Weeks.

Task 6.1.2 – Provide opportunities for the Executive Director to meet with congressional staff on a regular basis.

Task 6.1.3 – Focus interactions on Members of Congress from Atlantic coast states and those that serve on committees of importance to the Commission:

- House and Senate Commerce Justice, Science Appropriations Subcommittees
- House Fisheries, Wildlife, Oceans and Insular Affairs Subcommittee of the Natural Resources Committee
- Senate Oceans, Atmosphere, Fisheries and Coast Guard Subcommittee of the Commerce, Science, and Transportation Committee

Task 6.1.4 – Make connections (via correspondence and in-person meetings) with newly elected Atlantic coast members of the 115<sup>th</sup> Congress and appropriate Committee Chairs and members.

6.2 Communicate the Commission's federal funding needs to Congress and advocate for sufficient appropriations.

Task 6.2.1 – Clearly convey funding needs to congressional staff.

Task 6.2.2 – Justify the need for federal dollars by the Commission through demonstrating the social, economic, and ecological benefits of Commission activities.

Task 6.2.3 – Work with Commissioners to identify funding needs and develop a strategy to secure funding for priority programs (Atlantic Striped Bass Conservation Act, Atlantic Coastal Fisheries Cooperative Management Act, Interjurisdictional Fisheries Act Grants, Stock Assessments line item, Federal Aid in Sport Fish Restoration, Atlantic Coastal Fish Habitat Partnership, and Fisheries Information Networks). Seek funding for long-term monitoring surveys including Horseshoe Crab Benthic Trawl, NEAMAP, and SEAMAP. (See Task 1.1.51)

Task 6.2.4 – Demonstrate the value of the Commission as an effective management entity and resource to Members of Congress and their staffs.

Task 6.2.5 – Provide state-specific perspectives to staff and Members in meetings, especially management successes and challenges.

Task 6.2.6 – Contact home state Commissioners before communicating with Members or Congressional staff to get a local perspective.

Task 6.2.7 – Coordinate with the Gulf, Pacific, and Great Lakes Commissions on policy items of mutual interest including federal funding for fisheries programs. Executive Directors should continue providing unified positions on funding and legislative priorities to lawmakers and federal agencies, where appropriate.

Task 6.2.8 – Communicate Commission funding needs to NOAA Fisheries.

### 6.3 Engage Congress on *fishery-related legislation affecting the Atlantic coast.*

Task 6.3.1 – Monitor federal legislation affecting the Commission, including policy and annual appropriations bills and develop Commission positions on pending federal legislation, including the Atlantic Coastal Fisheries Cooperative Management Act, Interjurisdictional Fisheries Act, Anadromous Fish Conservation Act, Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), Federal Aid in Fish Restoration Act, in addition to new legislation addressing emerging issues such as marine national monuments and alternative energy initiatives.

Task 6.3.2 – Update Commissioners on pending congressional actions that may affect fisheries management as appropriate.

Task 6.3.3 – Coordinate with the Legislative Committee and Government Relations firm to identify relevant policy and legislative issues.

Task 6.3.4 – Monitor congressional hearings related to fisheries issues, and testify or provide statements for the record when appropriate.

Task 6.3.5 – Engage Commissioners in the formulation of the Commission’s position on federal legislative policy.

6.4 Promote member states’ collective interests at the regional and national levels

Task 6.4.1 – Communicate member states’ needs to Congress and our management partners.

Subtask 6.4.1.1 – Contact Commissioners before and after congressional meetings.

Subtask 6.4.1.2 – Facilitate opportunities for Commissioners to communicate directly with their Legislators and staff.

Task 6.4.2 – Participate with national organizations and management partners to address issues of mutual interest.

Subtask 6.4.2.1 – Conduct interagency coordination meetings (Memorandum of Understanding) under ACFCMA to improve state-federal partnerships.

Subtask 6.4.2.2 – Continue to serve as an advisor to Marine Fisheries Advisory Committee (MAFAC).

Subtask 6.4.2.3 – Continue to participate as a member on the Marine Fisheries Initiative (MARFIN) panel.

Subtask 6.4.2.4 – Continue to participate with the Association of Fish and Wildlife Agencies.

6.5 Promote economic benefits of the Commission’s actions (return on investment).

Task 6.5.1 – Provide state-specific economic and jobs statistics related to commercial and recreational marine fishing to lawmakers and staff.

Task 6.5.2 – Use specific examples to show successful management can be linked to economic success and increased jobs.

Task 6.5.3 – Demonstrate the differences between federal and state fishery management tools and the economic benefits of the state management approach (flexibility, closer to stakeholders, quicker response time).

## **Goal 7 – Ensure the fiscal stability & efficient administration of the Commission**

Goal 7 will ensure that the business affairs of the Commission are managed effectively and efficiently, including workload balancing through the development of annual action plans to support the Commission’s management process. It also highlights the need for the Commission to efficiently manage its resources. The goal promotes the efficient use of legal advice to proactively review policies and react to litigation as necessary. It also promotes human resource policies that attract talented and committed individuals to conduct the work of the Commission. The goal highlights the need for the Commission as an organization to continually expand its skill set through training and educational opportunities. It calls for Commissioners and Commission staff to maintain and increase the institutional knowledge of the Commission through periods of transition. Achieving this goal will build core strengths, enabling the Commission to respond to increasingly difficult and complex fisheries management issues.

### *Strategies to Achieve Goal*

- 7.1 Conservatively manage the Commission’s operations and budgets to ensure fiscal stability.
  - Task 7.1.1 – Monitor and update as necessary guidelines for cost effective meeting locations and meeting attendee travel policies.
  - Task 7.1.2 – Responsibly manage and review as necessary the Commission’s reserve fund according to the approved investment policy. Review investments annually with AOC.
  - Task 7.1.3 – Submit a Certification of Indirect Cost to the Department of Commerce.
  - Task 7.1.4 – Monitor expenditures on a monthly basis and project variances to ensure complete and timely use of available funds relative to grant cycles. Distribute monthly financial report to Senior Staff.
  - Task 7.1.5 – Prepare for and work cooperatively with CPA firm to conduct annual audit.
  - Task 7.1.6 – Launch Inventory module in accounting software to electronically track physical inventory. Update physical inventory.
  - Task 7.1.7 – Continue to provide administrative support to MRIP, including human resources and meeting management, grant and financial monitoring and office space.
  - Task 7.1.8 – Continue to provide administrative support to the Atlantic Coastal Fish Habitat Partnership (ACFHP), including logistical support for committee meetings and other Partnership activities.
  - Task 7.1.9 – Fully incorporate ACCSP into the Commission under the new governance structure.

Task 7.1.10 – Appoint Investment Committee for Commission’s retirement program.

Task 7.1.11 – Revise Commission’s retirement documents to ensure qualifications for participation in the plans are clearly and accurately defined.

Task 7.1.12 – Develop Commission compensation plan with updated job classifications and salaries based on location.

Task 7.1.13 – Develop SOPPs that detail human resource policies for Arlington-based and state-based employees.

Task 7.1.14 – Conduct comprehensive review and revision of Employee Handbook.

7.2 Utilize new information technology to improve meeting and workload efficiencies, and enhance communications.

Task 7.2.1 – Ensure consistency of software across the Commission and continue to cross-train administrative staff.

Task 7.2.2 – Provide targeted staff training for full use of office equipment and software.

Task 7.2.3 – Document standards for electronic record retention and develop site map of Commission electronic filing system for internal use, including protocols for document archiving.

Task 7.2.4 – Continue to audit Commission databases to verify contacts and relevant information.

Task 7.2.5 – Review SOPPs annually and revise as necessary.

7.3 Refine strategies to recruit professional staff, and enhance growth and learning opportunities for Commission and state personnel

Task 7.3.1 – Promote Commission’s programs and activities and recruit new talent by conducting seminars to graduate level marine programs.

Task 7.3.2 – Provide opportunities for undergrad and graduate students to participate in summer internships at the Commission.

Task 7.3.3 – Review and revise position descriptions as necessary.

Task 7.3.4 – Review vacancy announcement distribution list and update as necessary.

Task 7.3.5 – Conduct stock assessment methods training workshops. (See Task 2.5.1)

Task 7.3.6 – Facilitate staff participation at national and regional conferences; provide professional training opportunities.

Task 7.3.7 – Facilitate educational opportunities targeted to specific staff based on job responsibilities and facilitate participation.

Task 7.3.8 – Communicate human resources support available to state-based employees.

Task 7.3.9 – Conduct annual meeting with financial advisor to review retirement program performance with staff and provide opportunities for staff and provide opportunities for staff to meet individually with financial advisor to match financial goals with investment choices for retirement.

7.4 Fully engage new Commissioners in the Commission process and document institutional knowledge.

Task 7.4.1 – Work with Executive Committee to determine the appropriate transition and orientation program for new Commissioners.

Task 7.4.2 – Update, on an ongoing basis, the Commissioner Manual. Inform Commissioners when the update is substantial, no less than twice a year.

Task 7.4.3 – Continue to provide orientation materials for new members of Commission supporting committees.

7.5 Utilize legal advice on new management strategies and policies, and respond to litigation as necessary.

Task 7.5.1 – Respond as needed to litigation regarding challenges to Commission FMPs.

Task 7.5.2 – Work with Commission attorney to develop a potential information request policy for consideration by full Commission (FOIA equivalent).

Task 7.5.3 – Ensure annual submission of Conflict of Interest form by Legislative and Governor Appointee Commissioners.

Task 7.5.4 – Continue to work with human resources attorney to ensure all human resources practices are consistent with states laws.

## Appendix 1 - FY17 Action Plan for the Atlantic Coastal Cooperative Statistics Program

This plan is intended to provide guidance in achieving the goals of the ACCSP in FY2017 (March 1, 2017 – February 28, 2018). References within this plan are to the ACCSP 2014-2018 Strategic Plan.

### 8. ACCSP

- 8.1 Manage and expand a fully integrated data set that represents the best available fisheries data;
  - 8.1.1 Current data warehouse feeds will continue to be maintained and enhanced.
  - 8.1.2 Progress will be made in populating the biological tables in the Data Warehouse
  - 8.1.3 Progress will be made in populating the Bycatch data set in the Data Warehouse
  - 8.1.4 The new query interface will be monitored and adjusted based on feedback from the end users and research conducted by staff and the Information Systems Committee
  
- 8.2 Continue working with the program partners to improve fisheries data collection and management in accordance with the evolving ACCSP standards within the confines of limited funds;
  - 8.2.1 SAFIS will be maintained and enhanced based on requirements from the program partners
  - 8.2.2 Manage the APAIS and other related recreational data collection and management systems.
  - 8.2.3 A collaborative SAFIS redevelopment process will provide functional requirements for an integrated reporting system based on the prior year's visioning process. A redevelopment plan will be drafted based on these functional requirements and software development will begin.
  - 8.2.4 The LOBSTAH system will be fully deployed and in maintenance mode.
  - 8.2.5 Tablet and phone based versions of SAFIS will continue to be developed and deployed.
  
- 8.3 Explore the allocation of existing Program funds and work with partners to pursue additional funding;
  - 8.3.1 ACCSP will continue to manage the funding process in accordance with the Funding Decision Document
  - 8.3.2 The performance of funded projects will be tracked by the Operations Committee.
  - 8.3.3 Revisions to the process will be made as needed based on constituent input.

- 8.4 Maintain strong executive leadership and collaborative involvement among partners at all committee levels;
  - 8.4.1 The Coordinating Council will meet quarterly in order to provide Executive level managers with the most up-to-date information and an opportunity to provide direct input into the Program.
  - 8.4.2 Technical and policy level constituent committees will meet regularly to review and modify technical standards and make policy recommendations to the Coordinating Council
  
- 8.5 Monitor and improve the usefulness of products and services provided by the ACCSP;
  - 8.5.1 Metrics will be monitored. These include the collection of system usage statistics, user surveys, and data load and availability statistics. The metrics will be distributed throughout the year, but will be summarized in the Annual Report.
  - 8.5.2 Maintain a clear line of communications between Program Staff and our constituents.
  - 8.5.3 Ensure that there is a feedback loop to gauge the success of the Program in meeting the needs of its constituents.
  
- 8.6 Collaborate with program partners in their funding processes by providing outreach materials and other support to demonstrate the value of ACCSP products and the importance of maintaining base support for fishery-dependent data collection programs to state partners and their executive and legislative branches as well as to all other partner agencies
  - 8.6.1 Established outreach processes will continue. These include: routine automated updates for meetings, changes and/or updates in data and significant events, quarterly newsletters, data sheets detailing the status of the Program, articles in 'Fisheries Focus', and the preparation and publication of the Annual Report.
  - 8.6.2 Outreach will maintain a schedule of fisheries related events, reviewing them periodically to identify opportunities to establish or improve stakeholder communications. Appropriate staff will be detailed to these events to ensure that the ACCSP is represented.
  - 8.6.3 Staff will track various stock assessments, conferences, and other data intensive activities with an eye towards participating as fully as possible. Data will be provided where appropriate. This task would include the presentation of papers or posters in support of Program objectives.
  
- 8.7 Support nationwide systems as defined in the Magnuson-Stevens Fishery Conservation and Management Act (MSA).
  - 8.7.1 ACCSP will continue to participate in both the FIS and MRIP programs, providing resources as appropriate to the various committees of the programs.
  - 8.7.2 In accordance with the MSA, ACCSP will provide data for the Atlantic Coast to the FIS when requested.

**Habitat Hotline Atlantic 2017**  
**Theme: Submerged Aquatic Vegetation**  
**Lead: Michelle Bachman**  
*First drafts for feature articles due on July 1st*

	<b>Draft Completed</b>	<b>Photos</b>	<b>Feature Articles</b>	<b>Contributor</b>	<b>Status</b>
1	yes	can get	Introductory article about SAV	W. Judson Kenworthy	Wilson will call Judd (8/1)
2	yes	yes	Brown algae bloom in IRL	Kent	Reviewed (MSB)
3	yes	no	History of NC/VA SAV Team (SAV conservation in Albemarle-Pamlico estuarine system)	Wilson to contact Dean Carpenter	Uploaded but not reviewed
4	yes	yes	ACFHP Conservation mooring project	Lisa to contact Chris Powell	Reviewed (MSB)
5			Innovative techniques for documenting and monitoring SAV	Wilson to contact Joe Luczkovich	In progress (9/15)
6	yes	yes	Temperature and SAV in NY	Dawn to work with CCE	In progress (8/1)
7	yes	yes	Blue carbon	Mark to contact Phil Colaruso	Reviewed (MSB)
8	yes	yes	Mapping eelgrass loss in MA embayments	Mark	Reviewed (MSB)
9			SAV on the Lower Eastern Shore Project	Jay and VIMS	Jay will work with colleagues to get this together. End of September target.
10	yes	yes	Fish production value of marsh and SAV	Jay to contact Marta and Brian DeAngelis	Reviewed (MSB)
	<b>Draft Completed</b>	<b>Photos</b>	<b>Sidebars</b>	<b>Contributor</b>	
1	yes		Why GA/SC don't have SAV	Denise and/or January	Reviewed (MSB)
2	yes	yes (graphs)	Summary of Policy Statement Questionnaire and/or summary table	Lisa	Reviewed (MSB)
3	yes		Point to SERO's seagrass bibliography	Lisa	

4	yes		How have you used ASMFC recommendations? Looking for case studies.	Lisa	
	<b>Draft Completed</b>	<b>Photos</b>	<b>Updates on Habitat Activities</b> 2-3 paragraphs summarizing activities in 2017	<b>Contributor</b>	
1			Maine	TBD	Lisa emailed 9-11
2	yes		New Hampshire	Joshua Carloni	
3	yes	yes	Massachusetts	Mark Rousseau	Received 9-25
4			Rhode Island	Eric Schneider	emailed 9-8
5			Connecticut	Steve Gephard (steve.gephard@ct.gov)	Expected by 10-13
6			New York	Dawn McReynolds	emailed 9-8
7	yes		New Jersey	Russ Babb	
8	yes		Pennsylvania	Ben Lorson	
9			Delaware	Jeff Tinsman	emailed 9-8
10	yes		Maryland	Marek Topolski	
11	yes (marine debris and oyster update)	yes	Virginia	Tony Watkinson Jay Odell	
12			North Carolina	Jimmy Johnson	emailed 9-8
13	yes	coming later	South Carolina	Denise Sanger	Received 9-15
14	yes		Georgia	January Murray	emailed 9-8
15	yes		Florida	Kent Smith	
16			ACFHP	Lisa Havel	
17	yes		NEFMC	Michelle Bachman	
18	yes		MAFMC	Jessica Coakley	
19			SAFMC	Roger Pugliese	emailed 9-8
20			NOAA Fisheries	Lou Chiarella Pace Wilber	emailed 9-8
21			USFWS	Wilson Laney John Gill	working on it (9-15)
22			USGS	TBD	
23			EPA	Suzanne Ayvazian	emailed 9-8

#### Articles

- Ideal length is one page (2 pages max), including photos.

- Photos are highly encouraged, so please submit high-resolution images with your draft and include credit/source and captions (attach photos separately, do not embed them in the document).

**2017 Updates**

- Please keep state updates short, and feel free to include links.
- Photos optional, but encouraged (attach photos in email separately, do not embed them in the document)

**Audience**

- Please write for a general audience. Feedback from ASMFC Communications staff: the general public (not just managers) is interested in reading about coastal marine habitat activities. *Habitat Hotline* is also used as an outreach tool to promote fish habitat conservation and management activities.

**Submission**

Please send drafts to Michelle Bachman [mbachman@nefmc.org](mailto:mbachman@nefmc.org) and Lisa Havel [Lhavel@asmfc.org](mailto:Lhavel@asmfc.org).

- Discuss status at spring meeting
- Articles due on July 1<sup>st</sup>
- State/Agency Updates due on September 1<sup>st</sup>
- Final drafts are due on Nov. 9<sup>th</sup>

<b>Timeline</b>	
Jan/Feb	Conference call to finalize list of feature articles
July 1	Feature article drafts due
Sept. 1	State updates due
Mid-Sept.	HC Review of drafts
Nov. 9	Final drafts due
Nov-Dec 2017	Design layout Publish