Atlantic States Marine Fisheries Commission

1050 N. Highland Street. Suite 200A-N. Arlington, VA 22201

703.842.0740 703.842.0741(fax) www.asmfc.org

Vision: Sustainably Managing Atlantic Coastal Fisheries

TRAVEL AUTHORIZATION

TA No. 17-060 **Charge To:** 1026000SHAB **Approved by:** Laura Leach

Meeting Name: ACFHP/Habitat Committee Spring Meeting

Meeting Date: MAY-02-2017 - MAY-05-2017

Meeting Location: Arlington, VA

Hotel Details: Meeting to be held at ASMFC Office, 2nd floor Accommodations: Hilton Garden Inn-Courthouse Plaza 1333 N. Courthouse Road Arlington, Virginia 22201 Reservations: 703.528.4444 and provide Group Name: ASMFC to receive discounted rate.

Cutoff Date: APR-03-2017

Per Diem: Hotel: $242 Meals: $64 ($16/$17/$31)

Mileage Rate: $0.535/mile, eff. January 6, 2017. Rental cars must be specifically authorized.

Airport Transportation: Washington National (DCA)–4.5 mi. Rail: $4, Taxi $15; Washington Dulles (IAD)–23 mi.,Taxi $50; Baltimore Washington Int'l (BWI)–38 mi. From BWI: Airport provides shuttle to nearby Amtrak station for train to Union Station, then (Orange Line) metro to Court House Station.

Local Transportation: Hotel provides 11-passenger shuttle service within 2mi. radius of the hotel Mon-Fri 7am-11pm. (includes ASMFC office and Court House metro station). Both hotel and ASMFC located within walking distance to various restaurants.

Basic Guidelines: In consideration of the Commission's budget please attempt to select the most reasonable airfare. You are responsible for determining your arrival and departure times. Commissioners(or their proxies) are eligible to attend all meetings; all others are eligible for reimbursement to attend board/committee meetings of which they are a member. If the distance from your office to the meeting site is under 35 miles, ASMFC will not reimburse hotel, mileage or per diem but may reimburse any miscellaneous expenses that would not normally occur during a work day (i.e., parking, tolls).ASMFC reserves the right to disallow travel expenses it deems excessive or unnecessary to conduct ASMFC business.

Reimbursement: You must submit an ASMFC travel voucher with receipts within 30 days of the final day of travel. Electronic travel vouchers and scanned receipts are preferred and should be sent to Vouchers and receipts will also be accepted via snail mail if emailing is not an option. You must submit an ASMFC travel voucher with receipts within 30 days of the final day of travel. Electronic travel vouchers and scanned receipts are preferred and should be sent to accounting@asmfc.org. Vouchers and receipts will also be accepted via snail mail if emailing is not an option.

General Notes: Complete ASMFC Travel Reimbursement Guidelines can be found at http://www.asmfc.org/files/Meetings/TravelReimbursementGuidelines_Jan2017.pdf and the Electronic Travel Voucher: http://www.asmfc.org/files/Meetings/ASMFCElectronicTravelVoucher_Jan17.xlsx Please contact the ASMFC office if you have questions or would like staff assistance.

Authorized Travelers:

Babb, Russ	Campfield, Patrick	Carloni, Joshua
Groskin, Bob	Havel, Lisa	Johnson, Jimmy
Kritzer, Jacob	Lorson, Benjamin	Mcreynolds, Dawn
Murray, January	Odell, Jay	Patterson, Cheri
Powell, Chris	Rousseau, Mark	Sanger, Denise
Schneider, Eric	Schuler, George	Smith, Kent

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Authorized Travelers:

Thomas-Blate, Jessie

Tinsman, Jeff

Topolski, Marek

Watkinson, Tony

Directions to
Atlantic States Marine Fisheries Commission
1050 N. Highland Street, Suite 200A-N
Arlington, VA 22201
703.842.0740

From Baltimore and Points North

- I-95 S
- Merge onto MD-295 S via EXIT 52.
- Merge onto US-50 W / NEW YORK AVE NE toward WASHINGTON (Crossing into DISTRICT OF COLUMBIA) (go 5.0 miles)
- Take I-395 S toward TUNNEL (Crossing into VIRGINIA).
- Merge onto WASHINGTON BLVD / VA-27 W via EXIT 8A toward RIDGE RD. (go 1.1 miles)
- Stay STRAIGHT to go onto WASHINGTON BLVD / VA-27 W. Continue to follow WASHINGTON BLVD. (go ~2.0 miles)
- Turn LEFT onto 10th ST.
- Turn RIGHT at the 2nd street onto HUDSON ST.
- Take the **2nd** PARKING GARAGE ENTRANCE on your RIGHT and follow to B2 level.
- COMMERCIAL VISITORS PARKING will be directly in front of you. Once you get out of your car, walk to the RIGHT of the ramp and follow until to you see a door marked ADC Dentistry.
- Office is located on the 2ND floor, immediately to the right of the elevator

From Richmond and Points South

- Merge onto I-95 N toward WASHINGTON.
- Take EXIT 170A-B toward I-395 N / WASHINGTON / I-495 N / TYSONS CORNER. (go 0.6 miles)
- Merge onto I-395 N via EXIT 170A on the LEFT toward WASHINGTON. (go 8.2 miles)
- Merge onto WASHINGTON BLVD via EXIT 8A toward VA-244 / COLUMBIA PIKE / FT MYER. (go ~2.6 miles)
- Turn LEFT onto 10th ST.
- Turn RIGHT at the second street onto HUDSON ST.
- Take the **2nd** PARKING GARAGE ENTRANCE on your RIGHT and follow to B2 level.
- COMMERCIAL VISITORS PARKING will be directly in front of you. Once you get out of your car, walk to the RIGHT of the ramp and follow until to you see a door marked ADC Dentistry
- Office is located on the 2ND floor, immediately to the right of the elevator

From Washington DC

- Take 14TH ST Bridge. Continue to follow US-1 S (Crossing into VIRGINIA).
- US-1 S becomes I-395 S. (0.2 miles)
- Merge onto WASHINGTON BLVD/VA-27 W via EXIT 8A toward RIDGE RD. (1.1 miles)
- Stay STRAIGHT to go onto WASHINGTON BLVD/VA-27 W. Continue to follow WASHINGTON BLVD. (~2.0 miles)
- Turn LEFT onto 10th ST.
- Turn RIGHT at the second street onto HUDSON ST.
- Take the **2nd** PARKING GARAGE ENTRANCE on your RIGHT and follow to B2 level.
- COMMERCIAL VISITORS PARKING will be directly in front of you. Once you get out of your car, walk to the RIGHT of the ramp and follow until to you see a door marked ACD Dentistry
- Office is located on the 2ND floor, immediately to the right of the elevator

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From National Airport using the Metro

- Take BLUE LINE towards LARGO STATION
- Change at ROSSLYN STATION to the ORANGE LINE towards VIENNA
- You will be getting off at CLARENDON STATION
- Exit CLAREDON STATION and make RIGHT onto N. HIGHLAND ST.
- Cross over 2 streets and arrive at 1050 N. HIGHLAND ST. (past Lyon Hall entrance). Office is on the second floor (you will need to buzz in to enter).

Parking

If there are no available spaces at 1050 N. Highland Street, you can also use metered parking on the street or go to the paid public parking at 1205 N. Garfield Street Arlington, VA (see map on next page).

From Clarendon Metro station **to** the Atlantic States Marine Fisheries Commission

Directions to
Atlantic States Marine Fisheries Commission
1050 N. Highland Street, Suite 200A-N
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From Public Parking **to** the Atlantic States Marine Fisheries Commission

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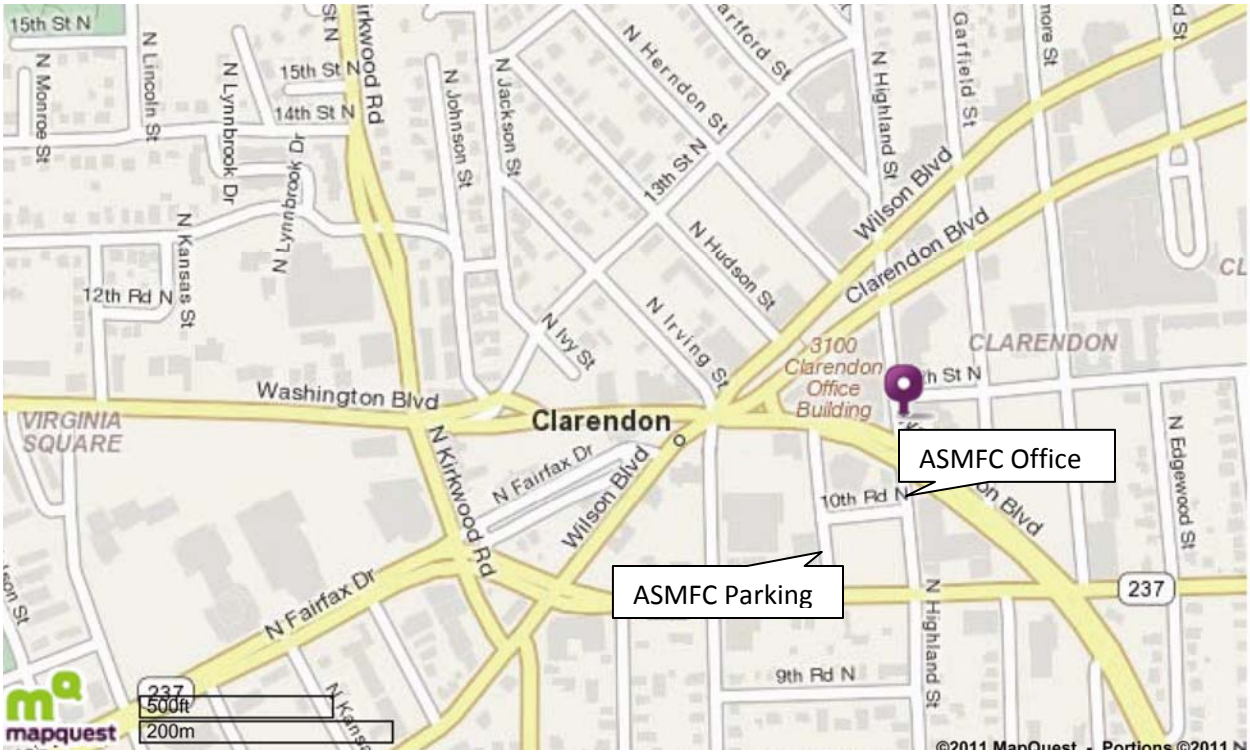

Walking directions to ASMFC @ 1050 N. Highland Ave. from Hilton Garden Inn Clarendon @ 1333 N. Courthouse Rd.

- On Courthouse Road turn right and walk towards 14th. Street N.
- Left on 14th St. N. & walk 1.5 blocks to N. Barton St.
- Turn right and walk to corner (Clarendon Blvd)
- Take a left onto Clarendon Blvd & walk for 5-6 blocks to N. Highland (see Pacer's Running Store on the corner).
- Turn left onto N. Highland, passing entrance to Trader Joe's on your left. Walk 2 blocks towards 7-Eleven, cross intersection, then cross again toward Lyon Hall Restaurant.
- Passing Lyon Hall on your right, continue next door, enter glass–enclosed lobby, and take elevators to 2nd floor. ASMFC office is first entrance on your right.
- Total walking distance is 1 mile

Atlantic States Marine Fisheries Commission

Habitat Committee

May 2 – 3, 2017
Atlantic States Marine Fisheries Commission
1050 N. Highland St. Suite 200 A – N
Arlington, VA 22201

Webinar: https://global.gotomeeting.com/join/262826293
Conference Call: 1-888-394-8197 Passcode: 222918

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.

Field Trip
Wednesday, May 3rd
Please meet at the ASMFC Office (2nd floor) at 12:50 pm in order to depart promptly at 1 pm. *More information to follow.*

Day 1: Tuesday, May 2nd (1:00 pm – 5:00 pm)

1. Welcome and Introductions (*J. Kritzer*) [Briefing materials (BMs) 1, 2, 3] 1:00 pm
2. Committee Consent (*J. Kritzer*) [BMs 4, 5] 1:10 pm
   - Approval of Agenda
   - Approval of Proceedings from Fall 2016
3. ACFHP Update (*L. Havel*) 1:15 pm
4. Habitat Website Statistics Overview (*L. Havel*) 1:30 pm
5. Estuarine Habitat Mitigation Banks Discussion (*W. Laney & K. Smith*) [BM 6] 1:50 pm
6. Technology Break (20 minutes) 2:30 pm
7. Review 2017 Work Plan (*L. Havel*) [BMs 7, 8, 9] 2:50 pm
   - Habitat Management Series: Aquaculture
   - 2017 Habitat Hotline
   - FMP Updates (Northern shrimp, tautog, menhaden)
   - Species fact sheets (updated annually)
   - Habitat Management Series: SAV Policy Update
   - Climate Change Document
8. Adjourn Day 1 5:00 pm

Day 2: Wednesday, May 3rd (9:00 am – 12:00 pm)

9. Reconvene 9:00 am
10. Invited presentation (*Dr. Bob Orth, VIMS*) 9:05 am
    - Title: Submersed Aquatic Vegetation in the Chesapeake Bay: Sentinel Species in a Changing World
11. Artificial Reef Committee Update (*M. Rousseau)* 10:05 am
12. Review of comment procedures and criteria (*L. Havel*) [BM 10] 10:20 am
13. Technology Break (20 minutes) 10:50 am
14. ASMFC HAPC Document Discussion (*W. Laney*) [BM 11] 11:10 am

15. Other Business 11:45 am
    - New chair/vice-chair
16. Adjourn Day 2 12:00 pm

Atlantic States Marine Fisheries Commission

Habitat Committee Meeting Notes

October 20-21, 2016
Gulf of Maine Research Institute
350 Commercial Street
Portland, Maine 04101
Webinar: https://global.gotomeeting.com/join/262826293
Conference Call: 1-888-394-8197 Passcode: 222918

ASMFC Staff: Dr. Lisa Havel, Toni Kerns.

Guests: Dr. Lisa Kerr (Research Scientist, Marine Fisheries Ecology), Riley Young Morse (Ocean Data Products Program Manager), and Dr. Graham Sherwood (Research Scientist, Demersal Ecology), all of the Gulf of Maine Research Institute (GMRI).

Habitat Committee Members Present: Michelle Bachman (NEFMC), Russ Babb (NJ), Lou Chiarella (NMFS-NE), Jessica Coakley (MAFMC), Oliver Cox (ME), Virginia Fay (NMFS-SE), Penny Howell (CT), Jimmy Johnson (NC), Dr. Jake Kritzer (EDF), Dr. Wilson Laney (USFWS-SE), Dawn McReynolds (NY), January Murray (GA), Jay Odell (TNC), Cheri Patterson (NH), Mark Rousseau (MA), Denise Sanger (SC), Eric Schneider (RI), Kent Smith (FL), and Marek Topolski (MD).

HC Members Participating Via Telephone/Webinar: Ben Lorson (PA), Tony Watkinson (VA), Dr. Pace Wilber (NMFS-SE)

Day 1: Thursday, October 20th (1:00 p.m. – 5:00 p.m.)

1. **Welcome and Introductions** (*J. Kritzer*) 1:10 p.m.

Dr. Jake Kritzer convened the meeting at 1:10 p.m. He welcomed everyone to the fall edition of our Habitat Committee (HC) meeting. He asked that we do introductions, then we will do a quick agenda review and get rolling. Jake noted that he is now based in NH, after being based in MA the last time we met. Jake noted that new members attending for the first time are Oliver Cox, from Maine, and Denise Sanger, from South Carolina. Denise indicated that she will be taking over the SC seat, for Bob VanDolah, who has retired.

2. **Committee Consent** 1:15 p.m.

- **Approval of Agenda**

We discussed the agenda. Wilson suggested that we move the estuarine mitigation bank discussion to tomorrow, when Kent is with us. He suggested that we might want to replace it with the SAV Policy discussion, but Kent really needs to be here for that discussion as well. Jake noted that Katie Drew will be joining us remotely tomorrow. We will have a presentation by Riley Young Morse today, on climate change modeling. There were no other comments on today's agenda. Jake indicated that he would review the Day 2 agenda tomorrow. The agenda was approved as modified.

- **Approval of Proceedings from May 2016**

The proceedings were approved without modification.

3. **Presentation on Local Habitat** (*O. Cox*) 1:18 p.m. *Presentation available*

Oliver directs the Division of Sea Run Habitat for the Maine Department of Marine Resources. He gave us a presentation on some of their habitat projects. He noted that they have a host of partners, including the Atlantic Salmon Federation, Penobscot Indian Nation, USFWS, NMFS and a lot of other groups.

They have a lot going on in the Federal Energy Regulatory Commission (FERC) arena. On the Kennebec River, all of the FERC dams are getting upstream fishways. There is a lot of Endangered Species Act (ESA) work related to Atlantic salmon (federally-listed Endangered). The dams are all getting fish lifts. The Penobscot River project just wrapped up. The Union River, Ellsworth Dam and Graham Lake relicensing is a pretty controversial project. Presumpscot River, Saccarappa Falls is a fish passage project. This one will require a fishway for two separate falls. The Mousam River is being relicensed as well.

They have done a lot of river crossing restoration. Most of the projects relate to brook trout, but some are related to river herring.

Maine DOT is finalizing a programmatic ESA consultation for Atlantic salmon, and establishing an in lieu fee program for fish passage. The latter is being done in collaboration with the U.S. Army Corps of Engineers. The Federal Emergency Management Authority (FEMA) is also interested in that program.

There are a great many non-governmental organizations (NGOs) that are working on projects. The Nature Conservancy (TNC) is working on some prioritization on the culvert projects. They received funding from the National Oceanic and Atmospheric Administration (NOAA), to do a project in the Penobscot River Basin. The Atlantic Salmon Federation has many projects. These include: Sheepscot River (Head-tide and Cooper's Mill Dams); Penobscot River Tributary Project; Pokomoonshine (aka Pokey Dam) and Meddybemps; and Coleman Pond. Maine Rivers is working on China Lake (Outlet Stream) with the Penobscot River Restoration Trust and Project SHARE (Salmon Habitat and River Enhancement). Hundreds of culverts have been replaced with passable structures.

Wilson asked about any consultation having taken place for Atlantic sturgeon on the Kennebec River, since the species was just listed in 2012. Oliver indicated that he believes that there was a consultation and there is authorized take. The plan is really not to pass them, so that sort of takes everything else off the table.

Oliver noted that a lot of the work they are doing is riding on the Atlantic salmon coattails, but now a lot is being done with river herring, mostly alewife. He shared a map of the three Atlantic salmon DPS units.

The USFWS has documented barriers in the form of culverts, and TNC has also been surveying them. Most of the culverts have been surveyed and that work is going into the prioritization model.

Oliver noted that Claire Enterline had put together a Stream Habitat Viewer, which is online. Different layers show alewife ponds and streams, inactive and active habitat. There is a layer for rainbow smelt, and Atlantic salmon, and marsh as well.

The Sheepscot River has a river herring run and commercial fishery. The present run is a fraction of what is possible. Oliver Cox indicated that one of the issues has to do with a state hatchery which raises brown trout. They don't want juvenile herring in their intake. They are working on the details for resolution of that issue.

The Outlet Stream/China Lake project has six different structures. The goal is to remove four of the dams (Box Dam, Lombard Dam, Morneau Dam, Masse Dam), and then provide passage at Mill Dam, and China Lake outlet. This should produce another million adult alewives.

Penobscot River Restoration: Oliver noted that this was a huge project, in the works for a long time. The Penobscot River Restoration Trust disbanded after the project was completed. Veazie Dam and Great Works Dam were removed. Howland Dam received a nature-like fishway. It is one of the largest such fishways in the country and pretty impressive. There was a lot of give-and-take with regard to hydropower on the river. The project balanced energy consumption so there was no net loss. Some dam heads were raised, one other rebuilt, and another powerhouse added at the Stillwater Dam. No one has really said how much power they generate now, as compared to previously. They can't get the information out of them regarding how much energy they actually produce, but Oliver guessed it was over 100 percent greater than prior to the project.

Oliver walked us through the history of the project: in 2004 the Settlement Agreement was signed; in 2008, the Trust exercised the option to purchase three of the dams; Great Works Dam was removed in 2012 (Oliver noted that when the water is drawn down after dam removal, they often find other structures in the water upstream of the dam site. Cheri asked if the State of Maine was going to try to preclude the mill that was still there resuming operations. Oliver indicated that was the hope. In 2013, the Veazie Dam was removed (there has been a lot of bank restoration here as well); in 2014, the Milford Dam Fish Lift was installed; in 2015, the bypass was constructed at Howland Dam. Oliver noted that the fishway is so realistic that one reporter asked "Where is the fishway?" when he was standing right next to it. Total project cost was around $70 million; the fishway Oliver thought was about $7 million.

Oliver noted that the USFWS and other partners have done 4-5 projects on tributaries: Blackman Stream—Leonard's Mills Fishway Project; Pushaw Fishway, Pushaw Lake (stocking was done with alewives); Davis Pond and Holbrook Pond; Mattamiscontis Lake (rock weirs); Souadabscook Stream (another Atlantic Salmon Federation project); South Branch (done this summer and NRCS and USFWS played a big role); and East Branch Pond. Conditions were great for working this year due to low water conditions.

Oliver showed us the graph of Penobscot River fish returns. River herring and American shad numbers are way up.

Jake noted that somewhere Melissa Laser is smiling about this success. Oliver noted that Melissa was the champion of the projects on the Sheepscot River.

Jake asked about the St. Croix River. Oliver noted that alewives are now allowed in the river. He shared some of his ideas about passage. The same person who championed the Penobscot, is now working on the St. Croix. There is a landlocked salmon hatchery there and they have some concerns about river herring passage. Jake asked about the politics. Oliver noted that two of the ponds are under FERC jurisdiction and there is a bill that would remove them from jurisdiction.

Jake asked for other questions for Oliver. There were no more.

Jake noted that we tried out dedicated Technology Breaks during our spring meeting. He asked us to focus on the meeting, during the meeting, and save the e-mail checks until the breaks.

Jake asked Lisa about modifying the agenda slightly further to address the ACFHP update before the Tech Break. Riley is coming in at 2:30 p.m. to talk to us.

4. **ACFHP Update** (*L. Havel*) 1:35 p.m.

Lisa gave us the ACFHP update. ACFHP met here at GMRI as well. They had two presentations, from Jeff Barnham and Dr. Graham Sherwood. They covered local ecology (Graham), and the Exeter Dam removal (Jeff). Lisa gave multiple updates, on the Whitewater to Bluewater collaboration, and the NFHAP Board meeting. She gave the Science and Data Committee (SDC) update. She noted the SDC is kind of in limbo right now due to chair Caroly Shumway's departure to the US Agency for International Development USAID). Julie Devers presented the recommendations for projects for funding in 2017. Lisa briefed us on the top three proposed projects. They are the Sheepscot River Barrier Removal in Maine (asking $50,000); the Oyster Reef and Estuarine Shoreline Restoration Project in Bogue Sound, North Carolina (asking $38,110); and the Sawyer Mill Dam Removal on the Bellamy River in Dover, New Hampshire (asking $50,000). Pat Campfield provided an update on ACFHP operations. The entire second day of the ACFHP meeting was spent updating the ACFHP Strategic Plan. The Steering Committee heard updates from all of the Strategic Plan drafting work groups, and then worked on revising the objectives and Strategies.

Jake asked what it means that the Science and Data Committee is in limbo. Lisa explained. We used to have around 30 members. The group really hasn't met since the Habitat Matrix was completed, in 2012. Staff have been trying to revitalize the SDC. Participation has been low. They have been trying to recruit new members. Then the chair resigned. They are now trying to get the mapping project off the ground. Lisa noted that is one of two main projects. She briefly explained the project. The idea is to highlight the most important areas for aquatic habitat protection and restoration. The SE component of it will be a pilot project. If that works well, we would expand the project to the NE. The other project is to get the Habitat Matrix online, and George Shuler of TNC is working on that project.

Toni Kerns noted that it would be great to have new folks to move things along. Lisa indicated that right now there are 8-10 SDC members. Lisa indicated it would be good to have at least 15.

Marek noted that some of the actions from the Implementation Plan, may emerge as tasks for the SDC.

Action Item: Lisa will share the list of current SDC members with the Habitat Committee so they can identify participants that might round out the group.

Jake noted Lisa had said that the sole focus of Day 2 was the Strategic Plan (SP), and asked if ACFHP had ever evaluated its progress toward the tasks in the plan. Lisa noted that we have quantified the number of tasks and those which have been completed. Lisa noted that a lot of the tasks were specified when the group was new.

Jake asked if the new SP would largely take from the uncompleted tasks in the old plan. January noted that we have to see what fits in the Strategies. Lisa explained that we would be working on the tasks

later, once the Objectives and Strategies are set. Jake asked if the Strategies would be the same. Some of them are, and there are some potential new ones.

Wilson noted that there is a potential new one, in the Water Quality and Hydrology objective. Wilson noted that Julie Devers had summarized and compiled for us all of the funding received and projects completed by ACFHP. Lisa gave the numbers to the HC. We noted that this would be useful information to include in any evaluation report.

Jake asked about the NFHP meeting which Kent is going to attend for ACFHP. He asked about our funding for future years. Lisa explained and noted that reduced funding reduces the opportunity for additional projects. She does collaborate closely with the other two Fish Habitat Partnerships (FHPs) adjacent to ACFHP, which are the Eastern Brook Trout Joint Venture (EBTJV) and the Southeast Aquatic Resources Partnership (SARP) FHPs.

5. **Estuarine Habitat Mitigation Banks** (*W. Laney, K. Smith*) 1:45 p.m.

This item was deferred until tomorrow since Kent was not present to participate in the discussion. We planned to discuss it under Other Business.

6. **Technology Break** (20 minutes) 2:15 p.m.

2:11 p.m. Jake asked us to take our Technology Break until 2:30 p.m.

7. **Presentation by Riley Young Morse (Gulf of Maine Research Institute): Accessing and Visualizing Satellite Data for Fisheries Managers in the NE Shelf Large Marine Ecosystem.** *Presentation available*

Jake turned the meeting over to Riley.

Riley noted that she was glad to have the opportunity to talk to us about this project. She was at the Atlantic States Marine Fisheries Commission (ASMFC) offices a few weeks ago. They have been working on this project for a couple of years. They received funding this summer, to take it where they want it to go. Riley manages the Ocean Data Products Team at GMRI. They do work for the ocean observing programs. The project is a result of a lot of work done by Andy Pershing at GMRI. They wanted to make environmental data more accessible. The idea was generated by the big 2012 warming event. In 2012, waters off the NE US Coast were the warmest in 150 years. Lobster was cheaper than cold cuts in some places. About a year later, there was a workshop in RI. One take-away was the need to track the pulse of ecosystem conditions via core observations of key environmental variables, etc.

Recommended actions: facilitate access to fisheries and climate data for fisheries stakeholders in the NE through the creation of a dynamic data dashboard. They received new funding from NOAA, to produce new and dynamically updated views into data.

Riley walked us through where they began. The first funding they received was from the National Center for Environmental Information (NCEI). They began with sea surface temperature (SST). They moved on to spatial averaging. They developed aggregation of SST data from grid points contained within specific sub-regions. Average time series were generated for each grid point within the sub-region (Ecological Production Units, EPUs). This enabled the development of reference levels (climatologies). This was

done to answer the simple question, “are we hot or cold?” they will be creating a series of climatologies for use.

Riley went live onscreen for us to the NOAA Fisheries Data Dashboard. They produce outlook advisories. She showed us the anomaly map from October 17. She showed a view which contained much of the data. She demonstrated the graphical capabilities for us. There is a lot of really cool stuff happening in the database. They have a lot of additional plans and ideas.

Next steps include: launch the preliminary tool with the stakeholder group, and get feedback; incorporate more relevant datasets, such as climate projections, biological, fisheries landings, and physical data such as chlorophyll, salinity, precipitation, and bottom temperature.

Questions: Jessica Coakley asked if they were working with the regional planning bodies, such as MARCO, which are already putting such datasets together. Riley indicated that they are working with the Greater Atlantic Regional Fisheries Office (GARFO) and the Northeast Fishery Science Center (NEFSC) of the National Marine Fisheries Service (NMFS). They are looking at the static maps of some of those data, and are considering how to get the live data and use them. They are considering whether to use time series, or other approaches.

Wilson asked how far south their geographic area extends. Riley showed the map and the rectangle in which they are working encompasses much of the ocean down through coastal NC. Wilson noted that he and other partners, on behalf of ASMFC, have been monitoring striped bass and Atlantic sturgeon distribution off the mid-Atlantic since 1988. He noted that they have an East Carolina University graduate student who is currently working to correlate fish distribution with environmental variables. He thought that they may have some productive correlations. Also, he noted that the US Coast Guard would probably be very interested in talking to Riley about what she is doing. Wilson explained that the Coast Guard is interested in being able to predict fish distribution offshore in order to more efficiently deploy their law enforcement assets, e.g., vessels and aircraft.

Penny, and Jay, asked technical questions about the data and analysis. Riley explained to them how it works. The data they are using come from satellites but are from locations of ocean buoys. Jay noted that TNC had felt that looking at anomalies would be a good way to look at the data. Jay noted that Riley appears to have already done, what they were planning to do, only much fancier. Jay noted that they could easily adjust the data to show it as a dynamic layer on the portal. Jay noted that they would be interested as well, in having a product showing what the last three years looked like, in comparison to the last 30 years.

Marek asked if they could add an animation feature to the dashboard. Riley indicated that they could do so. Marek thought that would be a user-friendly way to step through time.

Eric asked if this was just for viewing data, or for downloading data.

Riley noted that was an interesting question. They are willing to explore that aspect. Eric indicated he would need to think about the scale, about the kilometer grids. He appreciated them securing all of the data. Eric noted that many states have worked with David Stephenson to take all of the states’ and NMFS’s trawl data, and incorporate it all into one data base. They are still working to use the data to update EFH maps. The structure is there, so the states are asking if they can query their own data at least. It would be worth it to talk to Jeff Pescuitti. Eric indicated that most states prefer that formal

written data requests be made, rather than allowing general data downloading from a portal. That is not to say that there won't be the ability to download or request data. Eric noted that they hope to establish accounts and be able to work off the database.

Riley indicated that they started in the NE since they know many of the people there. They are working to see if they can deal with the confidentiality issues, and be able to load the fisheries data and look at distribution by month, etc.

Eric indicated that a portal is already built. Jeff Pescuitti is the contact for that and Eric suggested Riley contact him.

Jay asked if they have correlated the data from the satellite, with the buoy data. They have not done yet, but are discussing doing so. Jay thought it would be relatively easy to do.

Michelle Bachman noted that the NE data portal has been serving up some data as well, and she hasn't found anything like this at all. Michelle stated that some other staff at the New England Fishery Management Council (NEFMC) would likely find these data very useful. She suggested that Riley reach out to their office.

Wilson told Riley about the new (2016) Matt Breece paper on dynamic seascapes and Atlantic sturgeon distribution. He will send that paper to her since he thinks it will be of interest. [Note: the paper is Breece, Matthew W., Dewayne A. Fox, Keith J. Dunton, Mike G. Frisk, Adrian Jordaan and Matthew J. Oliver. 2016. Dynamic seascapes predict the marine occurrence of an endangered species: Atlantic Sturgeon *Acipenser oxyrinchus oxyrinchus.* Methods in Ecology and Evolution: doi: 10.1111/2041-210X.12532}

Jessica suggested that Riley might want to contact the folks doing the Quahog survey to talk to them about their possible interest and collaboration.

Lisa was asked by Jake to walk us through the 2016 Work Plan.

8. **Review 2016 Work Plan (*L. Havel*) 2:35 p.m. • Habitat Management Series: Sciaenid Habitat Source Document**

Habitat Committee tasks are under Goal 4 of the Commission Work Plan. Lisa noted that we had gone through these at the spring meeting as well. She noted that ACFHP covers some of the tasks, but we can go through all of them just for review. Lisa noted that we can't change the text of the Strategies, but we can change the Tasks. Toni advised us that the Strategies and Goals are reviewed every five years by ASMFC so we would have an opportunity to modify them at that time.

Jake noted that it would be helpful to have a note in the annual implementation plans, that the Strategies can't be changed.

Lisa reviewed Strategy 4.1. Task 4.1.1 was to finalize the Sciaenid Habitat Source Document. That has been done and it will be presented to the Board next week at the Annual Meeting. Lisa noted that she had put the authors in alphabetical order, which put Jimmy first, but Jimmy thinks Jay should be put first. Jay noted that alphabetical order was fine with him.

Wilson asked Jimmy and Jay whether Chip and/or others who substantially contributed should be considered as co-authors. There was some discussion about that. There were several contributors who made significant contributions. After further discussion, Melissa Yuen, Doug Adams, Steve Midway, Kate Wilkie and Brian Boutin, Chip Collier and Allison Deary were all added.

Wilson noted that giving authorship is one way that we can acknowledge the contributions and give a perk to those who volunteered their time. He also asked that we have a preferred citation format included in the document. Lisa indicated that she is going to make sure that happens. Wilson noted also that he believes that ASMFC staff who write documents should also receive authorship for them. Toni noted that hasn't generally been the case at ASMFC. Wilson noted that he was somewhat frustrated by the experience that he, Chris Wright, Max Appelman, Derek Orner and Gary Shepherd had during the production of the current Striped Bass Report to Congress. The NMFS staff responsible for final production of that document had wanted to eliminate any literature citations, and also not provide authorship of the document. Wilson and colleagues pushed back and secured the changes in the document. Wilson noted that any document which an agency produces, should always have the names of the authors, in order to provide interested readers to get in touch if they desired more information.

After further discussion, we asked that Jay Odell be made the first author, with the remaining authors in alphabetical order. We also had a discussion about attributions/citations for the original FMPs from which some of the text came. All the FMPs should be credited in the new document.

Toni suggested that we use the names of the primary contributors as the authors, but put any other contributors in the Acknowledgements. Lisa will check with all of the potential authors to make sure that they want to be included.

Action Item: Lisa will work with Toni and rearrange and add authors to the Sciaenid Habitat Source Document. Jay will be first author and all others will be alphabetical. Lisa will also add a preferred citation.

Task 4.1.2: This is an ongoing task that will be done.

Task 4.1.3: Fact sheets will be reviewed every three years. Toni noted that we assign people species, but she asked if those assigned are actually doing any literature searching to see whether anything significantly changed. Jake didn't believe that we did any formal review. Jake noted that last year, we did a formal review of all the fact sheets and updated them.

Jessica noted that we could send reminders to folks, to let them know that they need to consider whether the fact sheets assigned to them need some updating. Maybe we could have some sort of trigger each year. Jake noted that we could crowd source it, ask if anything new has come up. Toni noted that we want it to be as current as possible. Jake noted that changes are relatively rare. He agreed that is a good point. He thought Jessica's idea for some sort of nudge is a good one.

Action item: Lisa will send a reminder in the spring to make sure everyone's fact sheets are up to date.

Wilson noted that he had revised Atlantic sturgeon, and noted that subsequent to the sheet being updated last year, we now have Atlantic sturgeon Critical Habitat proposed, and several rivers are now documented as having both spring and fall spawning populations. What information rises to the level of requiring a fact sheet update?

Toni suggested that we discuss things with Lisa and then decide if the sheets need an update. Jake noted that is what he had done with American Eel.

Task 4.1.4: Done; actually hosted jointly with NOAA Fisheries (aka NMFS) a national artificial reef workshop, which was very successful.

Task 4.2.1: ACFHP does this one. Jake noted that the Commission had an ecosystem-based management (EBM) work group at one time. Jake and Wilson were on it. Wilson noted that Pat Campfield was our staff liaison. Lisa and Toni noted that the EBM modeling which the ASMFC was doing (the multi-species virtual population assessment model, or MSVPA), has largely been completed. Toni noted that most of the Commission's consideration of EBM entailed consideration of ecological reference points for Atlantic menhaden. Wilson noted that he thought Shanna also had been given some responsibilities for EBM. After further discussion, we decided that we would discuss this more in 2017.

Task 4.2.2: Lisa does this as ACFHP and HC representative, as do all of the members.

- **2016 Habitat Hotline**

Task 4.2.3: Habitat Hotline: Jake and Wilson were tardy on many articles. Cheri volunteered to contact Rua Mordecai about the SALCC one. Lisa noted that many of the state and federal updates were missing and needed. Oliver will check on Maine's. Cheri will work with Oliver on an article.

We noted that we do not have a U.S. Environmental Protection Agency (EPA) and and lost our US Geological Survey (USGS) representatives from the HC. Wilson suggested that we contact Tom O'Connell, the new Director of the USGS Leetown Science Center, about getting someone from USGS Leetown. He noted that he has a possible name, a USGS scientist he met at the American Fisheries Society annual meeting who may be taking over the USGS Wellsboro, PA, laboratory and is very interested in collaborating with ASMFC. Mark indicated Phil Colaruso from EPA who may be interested.

Action Item: Lisa will work with Toni to try and secure Tom O'Connell and Phil Colaruso as Habitat Committee representatives.

Jake asked about a deadline for the Habitat Hotline drafts. It was September 1. Jake suggested December 30 be the new deadline. Lisa noted that if we want to get it out before the holidays, so people will really read it, we need to make the deadline much sooner. Wilson indicated that he thought he could produce the table of ASMFC species life stages that use the water column pretty quickly.

Jessica noted that John Manderson at the NEFSC gives a great talk that addresses all the different forces operating on fish. Jake will contact him and ask him to produce something for the Habitat Hotline.

Lisa indicated that if we don't think we can finish it, we can push the deadline back.

Jimmy volunteered to spearhead the issue, working with Lisa.

Russ indicated that he had met with Dr. Ken Able, and Ken had asked him about the article.

Toni asked what staff could do, to help us make these deadlines and avoid the crunch we seem to be in every year. She noted that the timing is bad, for Tina who has the ASMFC editorial responsibility. She noted that there are a lot of articles for which Jake and Wilson volunteered for this particular issue.

January noted that in the past we had more contributors.

Jake noted that we should have pushed harder to get a volunteer to lead the issue.

Jay suggested the writing workload be distributed beyond just two authors. He noted it was always fun to edit someone else's stuff. Cheri noted that Jake and Wilson were supposed to find others to assist; they didn't have to produce everything themselves. Jake agreed that was the case. Jake noted that there needs to be one clear lead.

Wilson thought that it would be better to move the deadline, at least for feature articles, to July 1 of each year. Cheri noted that the states need more time to produce their updates, since a lot of what they are working on is not yet completed.

Jake noted that Lisa needs to be more hard-nosed on us, to get us to move along with writing.

Mark noted that our primary mistake was in not having designated a lead for the issue. Toni suggested that Lisa could certainly send more e-mail reminders. Lisa noted that it would take more time for her to send individual e-mails, or make more phone calls.

Jake suggested that we have a mid-term conference call, to check in and see how folks are doing. Russ suggested that we go down the list of overdue products and shame everyone.

Toni noted that she used to send weekly e-mails as reminders. Toni noted that she didn't want any of us to be insulted. Wilson noted that he wouldn't be insulted by receiving even daily e-mails. He noted that he works much better under a strenuous harassment regime and doesn't take it personally.

Toni noted that she just wanted to find something that works better. Jake noted that all of the workload this year was on Lisa. He suggested that moving the deadline up a bit, would be better.

Toni liked the idea of having a draft to present to the subcommittee, on the conference calls we plan to hold, and indicated that would be good. Jake noted that having a draft by September 1 to review, would be good since we could review it at the fall meeting each year.

Lou asked when we usually settle in on a theme for the Habitat Hotline. He noted that he could commit to having his staff contribute some articles, depending on the theme. Cheri stated that we usually set the theme at the spring meeting. Toni suggested setting the theme tomorrow. Someone noted that would better insure that it would get done.

Toni suggested that we set the theme tomorrow, then we have a conference call in January to develop the issue further. Jake noted that we have theme-setting on the agenda for tomorrow. The reason we didn't get it done last year was because we spent so much time illegally revising the Strategic Plan.

Cheri asked about the Interstate Tagging Committee article. Wilson can produce that from the existing information. He and Toni noted that the committee had not met in some time, in part because our chair

(Paul Caruso, Massachusetts Division of Marine Fisheries) had retired. Wilson remains the vice-chair. They noted also that there had been no requests for certification of any tagging programs. Wilson noted that publicizing the committee through an article in Habitat Hotline might precipitate some new requests for certification.

Jake asked again about the deadline for draft articles. The date will be November 4, to get drafts to Lisa. Nothing has changed from the briefing materials except that Wilson is writing the Interstate Tagging Committee article, instead of working with Jeff Kipp to write it.

- **Habitat Management Series: Aquaculture**

Task 4.2.4: The Aquaculture document is on Marek's desk. He had looked through the SAFMC Aquaculture Policy document. It has information in it that we didn't plan to include, but we could just reference the SAFMC document for that information. Marek noted that we had tried to figure out the gamut of species that are cultured. There is no overlap between our draft and the SAFMC document. It would be relatively easy to reference the SAFMC document for that information. Using that as another referencing document, it shouldn't be too far off to request a review from everyone. Marek noted that Pace always reminds us that he needs something short and sweet, and this is not too short. He asked if we could produce a separate document, like an Executive Summary, which we could peel off and hand out.

Jessica noted that the MAFMC stole the idea for policy documents from the SAFMC. They produce a 20-page background document, with a much shorter policy document. They have preambles for some of their documents and they separated that out as well.

Marek asked if you can download specific portions of the MAFMC documents. Yes, you can. The SAFMC ones are comprehensive, with the policies buried.

Marek reviewed the outline for the SAFMC document (which is 29 pages). He noted that he was demoralized after opening a 29-page document.

Dawn stated that ours should not be a policy document. Toni noted that there shouldn't be any policy in the document.

Jake noted that our other Habitat Management Series documents are weighty, management documents. If we think that an Aquaculture policy document is needed, then we need to go back to the Policy Board.

Dawn noted that things changed a few years ago, and there was a desire to shorten the guidance documents, and include a lot more links. More recent documents are shorter.

Marek noted that the current draft is 18 pages. He noted that we had never settled on a direction, information versus policy.

Toni noted that the HC decides what to do, and the Policy Board just approves.

Marek noted that some arrangement needs to happen to make it flow. It is close to ready for review.

Dawn suggested that we form a committee to review it. Russ, Marek and Eric were on the committee. Marek noted that he went to the restroom and when he came back, he was the chair. Marek suggested Kent should be on it.

Eric noted that we could go back and look at the minutes from our Port Jefferson meeting notes, to see what the scope was. He noted that would refresh our minds. The idea was to assist those reviewing aquaculture habitat impacts (Russ) or aquaculture as habitat (Jake). Jake thought the subcommittee was going to take the ideas and run with them. He suggested that we resurrect the subcommittee and move it forward. He reviewed the task again.

Marek suggested that we use the same subcommittee. He suggested that anything missing can be developed using other reference documents. Dawn volunteered to review the draft.

Jake suggested that the subcommittee meet and decide how to proceed. Jake suggested that the work will spill over into 2017. For now, progress has been made but this is behind schedule. Jake noted that review and approval by the Interstate Fisheries Management Program (ISFMP) Policy Board doesn't have to happen at the fall meeting.

Jake asked who invited Toni to the meeting. He noted that the meetings are more fun when she isn't here (joke). Toni noted that she was helping out Lisa.

Action Item: Lisa will work with Marek, Kent, Eric, Russ, and Dawn to move the Aquaculture document forward. She will try to find the notes from Port Jefferson to refresh everyone's memory on the original scope.

Strategy 4.3: All ACFHP.

Task 4.4.1: the BOEM letter, and the comments provided by ASMFC on the Atlantic Sturgeon Critical Habitat Proposed Rule, fit this task. Toni noted that if the HC thinks things need to be commented upon, there are ways to get things in front of the Policy Board, if we will step up and assist.

Lou noted that they are sending comment letters to Lisa now from the NE NMFS Habitat Conservation Division. Lisa noted that she had asked about others wanting to work on projects. Lou noted that we don't need to formalize things. If there are things that the ASMFC wants to comment upon, NMFS is happy to pull us in.

Jay asked what the volume of notices is. Lou stated that it isn't very many, maybe ten or so. Lou noted that there are two different processes.

Jessica noted that MAFMC is copied on these and gets maybe five a month. She noted that someone has to open them and decide whether members will be interested. She does look at them. She makes the call whether she thinks the Council is going to comment, or not.

January asked if we should have a small committee to review these and then contact the larger group. She thought adding some members to review them, with Lisa, to review and consider.

Lou noted that when they are sending signed letters, the process is already essentially over.

Ginny asked if anyone tracks NOIs for development projects. Jessica noted that MAFMC sent a letter to the NMFS, letting them know of their interest in large-scale projects. Karen Green on Lou's staff, provides updates to the Council. She lets them know which things are in the updates. There has to be a filter on the projects. The HC would have to decide about what they want to know. There are many projects that come across their desk during the course of a year.

Jay noted that we had a discussion, some years ago, about the criteria which would trigger us writing a letter. Jay noted that it certainly is not every time an ESA consultation is triggered. Perhaps we would want to know about sand-mining projects, or those for which NEPA would be triggered.

Toni stated that we might want to select topics of interest. She stated that for the ASMFC, it would probably need to be a project that would impact more than three states.

Jake noted that we have had some discussions, and had one at Cape May, about criteria which we would use for commenting. Jake suggested that perhaps we do a retrospective, and consider things that ASMFC should have commented upon, that we missed. Maybe when something like the BOEM seismic testing comes up, then we hit them.

Toni suggested that Lisa be the filter, if we provide the criteria. Perhaps we set up a subcommittee to assist her. It shouldn't be the entire committee.

Lisa noted that she needs a heads-up, and then we need to work with NOAA on it.

Jessica stated that there are a lot of other programmatic things, on which ASMFC-HC probably should be commenting. The Corps recently had a nationwide permit document, and it included a living shoreline section, so ASMFC may have wished to comment on it. She noted that programmatic documents are the ones on which we should focus. Ten or so letters a year is probably not a big lift for the staff.

Jake noted that he would take a couple more comments from Lou and Wilson, then we will move on. We can talk about forming a subcommittee to come up with filters, and assist Lisa.

Lou noted that for now, until we do something else, he will assume that if a Council is weighing in on an issue, the ASMFC Habitat Committee would be interested.

Wilson suggested that FERC hydropower projects should be on our "filter" list as well. He noted that such projects often would be of concern to ASMFC, if they involve diadromous species, because the populations of those species roam widely and impacts on any one given natal system, affect multiple states and may have far wider ecological consequences. While ASMFC may not wish to seek intervener status, letters from them could be influential in the decision-making process.

Jake asked why the ASMFC weighed in on the recent Marine National Monument proposal. Toni indicated that it came from the ISFMP Policy Board, and the concern was over affected fishermen for the most part. She noted that the Policy Board had not suggested it come to the HC for review.

Task 4.4.2: ACFHP does this one.

Task 4.4.3: ACFHP does this one.

Task 4.4.5 (should be 4.4.4): Tina does the web page, and Deke does the tweeting.

Jake thought that we had asked to have Tina come and talk to us at some point. We haven't yet scheduled her for a presentation, but we can do so.

Action Item: Lisa will work with Tina to see if she can present to us at the spring or fall meeting next year on our social media presence and outreach, and how to better reach out to our audience.

Wilson asked about Deke's tweeting. Toni explained that he tweets informational items for the most part. Wilson asked if it would be possible for the HC to get Deke to tweet things for us. Yes, work through Lisa if we have something we want to tweet.

Lou asked if ACFHP gets credit for the things they do for the HC/ASMFC.

Toni noted that ACFHP is in here, because the plan covers all the administrative support they provide. Toni noted that the ACFHP-related tasks are vague and are intended to show that ASMFC is the administrative home for ACFHP. Lisa noted that she does review all of the tasks each year, with both Kent and Chris. January asked if it would be beneficial to include those accomplishments in the NFHP report (every three years). Lisa can do that.

Task 4.5.1: Doing it now.

Task 4.5.2: ACFHP is doing some of this. Penny noted that TNC is doing some of this. Ginny noted that part of the funding used for the ACFHP project was Atlantic Coastal Fisheries Cooperative Management Act funding. Toni thought that task intended to capture the winter flounder habitat modeling and other work being done through the Structured Decision Making tools developed with the North Atlantic Landscape Conservation Cooperative (NALCC). Wilson noted that he and Roger Rulifson and their graduate student Jillian Osborne were working on this aspect. Many members are engaged with the Councils, and Jay noted that there are four major efforts working on this as well, between Cape Hatteras and the Mid-Atlantic.

Task 4.6.1: Penny stated that she incorporated climate change into the tautog update that she worked on this year. Toni noted that tautog is about to happen and will be worked on over the winter (same update that Penny already worked on). Toni asked if we should bring this up tomorrow.

- **Climate Change Document**

Task 4.6.2: Lisa noted that this one entailed identifying efforts to mitigate climate change, and we decided that we would tackle it differently. We did the task by compiling a document for the Policy Board. We can talk about how to replace it, tomorrow. The task is done. It is a pdf file, so it is done.

Task 4.6.3: EBM communication, Lisa talked to Shanna, and she said there is not much else to do on this one. Toni noted that we could sit in on the Council webinars as their FMPs are developed. There are Commission representatives on those Councils.

Penny brought up Horseshoe Crab as an example of EBM, since crab harvest is based on the birds [i.e., red knot migration forage needs; they feed on horseshoe crab eggs]. The issue that the Management Board has to deal with, and the Policy Board is not, is the biomedical harvest mortality factor. Penny

noted that the horseshoe crab Technical Committee (TC) disagrees regarding the horseshoe crab mortality. It is a gray area. The losses from such use have become a large part of the mortality, and there is nothing that can be done, because it isn't under anyone's jurisdiction. Penny stated that sometime, somewhere, Congress has to deal with the use of natural resources that are in this EBM-based plan that involved a threated species and a heavily harvested species.

Toni noted that they have guidance for the harvest. There will be a closed-door assessment, which will enable access to the confidential data.

Jake noted that we had some debate about whether this was a habitat issue or not. Jake noted that this is another thing that slipped through the cracks.

Toni noted that they are fully aware of the problem.

Denise Sanger noted that they have been doing a lot of work in SC, where there was no harvest this year.

Penny noted that they could come back and say their mortality is 100 percent, and it wouldn't matter, since there is no jurisdiction other than the FDA.

Jake stated that the industry can't say that the ASMFC has no jurisdiction, since they are removing crabs from the population and that constitutes "fishing."

Toni noted that the reason for the harvest is that the horseshoe crab blood is needed for testing medical equipment.

Jake didn't understand why the ASMFC doesn't have jurisdiction. If you pull something out of the water, you are fishing.

Toni noted that the industry views any sort of regulation as a challenge.

We had a brief discussion of the second Task 4.6.2, which deals with increasing communication on EBM, with ASMFC committees to find overlap with fish habitat-related issues. Katie Drew will give us a presentation on that topic tomorrow.

Cheri asked that we be made aware of when FMPs are going to be updated.

Toni noted that we can get a sense of that from the assessment schedule. She noted that the HC can update habitat sections at any time, via Addendum. Wilson noted that the HC and Policy Board had changed the process to allow this more efficient approach.

9. **Adjourn Day 1** 5:05 p.m.

The meeting adjourned at 5:24 p.m.

Day 2: Friday, October 21st (8:15 a.m. – 11:15 a.m.)

[Same members and staff present as Day 1; some (Russ Babb and Ginny Fay had to leave early for flights]

10. **Reconvene** 8:15 a.m.

Jake convened the meeting. He noted that Dr. Lisa Kerr, a scientist here at GMRI is joining us. Dr. Katie Drew will be giving us a presentation this morning as well. Jake reviewed the agenda with us. He noted that we should stop e-mailing now during the meeting, since we will have a Technology Break later this morning. He asked Lisa for any other announcements. Lisa noted that we had deferred the discussion on estuarine mitigation banks until today so Kent could participate. We will have that discussion if we have time.

11. **Habitat in stock assessment models** (*with Katie Drew and GMRI scientists)* 8:18 a.m. *Presentation available*

Katie thanked the HC for giving her the opportunity to speak to them. She noted that this is an interesting topic. She began with providing background on stock assessments and how they work. She will also cover incorporating habitat data into assessments, and what we do now and what we may do in the future.

Katie noted that assessments are a system of equations that describe how a population changes over time. They require catch data (how much are we taking out every year), biological and life history data (growth rates, longevity, etc.), and survey or other index of population trends.

Katie walked us through a typical stock assessment. 1) survey the population (your survey catches 4 fish per tow). 2) the fishery occurs (100 mt removed). 3) survey the population again (your survey catches 2 fish per tow). The estimated population size initially was then 200 mt. That she noted is a big oversimplification of how assessments really use and incorporate data.

Considerations: fish die of natural causes (we can estimate that rate, M, from longevity and life history data and account for that in the model); new fish are born every year (we can track recruitment from surveys as well).

You can't do an assessment with just two years of data. We need long time-series with good contrast to get good estimates of recruitment, abundance and fishing mortality. Real life data are noisy and imperfect. Did your index go down because the population went down, or because the fish moved out of your survey area?

What does habitat affect? Recruitment (poor nursery habitat = poor recruitment). Survival (less prey available, more disease, impacts from toxins or low oxygen zones, etc.). Movement/migration (changes in distribution or migration timing may affect survey catchability). These are broad topics off the top of Katie's head. You can see some ways to build these into what we already do.

What do we do now? There are a lot of people doing work on this issue, but it isn't something done regularly and reliably. We standardize indices, use environmental factors like temperature, salinity, and DO to remove variability. We can incorporate this information into "traffic light" approaches (Katie showed us Northern shrimp as an example, since we know temperature is an important factor for recruitment in that species; we expect poor recruitment in view of recent temperature regimes, for that species).

What could we do in the future? We predict future recruitment and productivity of the stock under different habitat conditions. We may understand the past and predict future survival rates based on habitat conditions. We may quantify benefits of habitat restoration to populations (i.e., what is the habitat/production relationship). Katie noted that these possibilities she has arranged in order from easiest to do, to hardest to accomplish. A quantitative understanding of these relationships is needed.

What do we need? We need metrics to quantify habitat (temperature, water quality, area?). We need a good time series of data so we can develop a good model of the relationship. We need an understanding of how habitat affects survival, recruitment, etc. We would need an actual equation to make it quantitative. There is a qualitative approach, i.e., what "good" or "bad" metrics of habitat mean to the population and how to respond to that factor. If you are going to incorporate this into a traffic light approach, you also need to understand what management actions should be taken in response.

The key is making connections: between the people doing habitat and assessment work; between habitat metrics and population effects; and between habitat metrics and management response. There is a lot of potential to improve both fishery management and habitat restoration.

Katie finished up and indicated that she would take questions.

Jake noted that Graham Sherwood had joined us from GMRI.

Wilson asked two questions. First, can we incorporate long-term climate cycles like the Atlantic Multidecadal Oscillation (AMO), and La Nina/El Nino into the models? He noted that there has been a good bit of work on some of those cycles with regard to recruitment over time. Second, are there species which she thinks may be good pilot candidates for some pilot efforts, i.e., weakfish, or American eel. He noted that the weakfish TC and collaborators had already done some investigation of incorporating environmental factors during the latest weakfish assessment.

Katie noted that we may be able to do so. The model doesn't need to understand why the numbers go up and down. We just need to have the long-term time series. She noted that climate change will complicate things. That kind of information is not necessarily important for understanding what happened in the past, but is important for understanding what is going to happen in the future. Katie addressed Jiang's work on the weakfish assessment, where we were able to estimate the increasing trend in natural mortality. We would need to make a connection between the cycles, and why the population changes. Katie noted that in terms of potential pilot species, Northern shrimp is a good one. Some of our anadromous species, where we can measure habitat availability, also may be good candidate species. Possibly sturgeon and some of the other species would be good. It also depends on for which species we have shown definitive relationships with habitat.

Jessica had some quick comments. She agreed with Katie that it is important to tell the managers what the recruitment factors are and whether they will change. The challenge is in picking the right factors, since recruitment is driven by many factors, at both the egg and larval stages. Those factors are manifested in growth rates, differences in age to maturity, all of those parameters which our modelers try to break out. Rates may be lower in one area, than another. Prey distribution may have shifted. All of those factors play a role. Jessica noted that survey stratification can play a role as well. She noted that she had just attended the quahog assessment workshop, and one researcher from Canada shared with them how they had recently re-stratified their survey, to enable a better look at high-, versus low-quality

habitat. Jessica noted that they are discussing changing the stratification of a number of different surveys. She was curious to see what Katie thinks about that.

Jake noted that catchability is another factor which can change.

Katie noted that she had touched briefly on survival, but agrees with Jessica that other life history metrics can play into things. A lot of the surveys are already stratified based on bottom type or other factors. She agreed that catchability is a factor as well.

Penny noted that American lobster is a good example. There is a relationship between bottom temperature and recruitment, and size, so they could ignore some of the factors we discussed. Temperature changes natural mortality, and they had a long time series for recruitment. They also had data for Boothbay, which is going in the opposite direction (i.e., habitat conditions becoming more favorable instead of less favorable). Penny noted that a big issue has been "punishing the fishermen" for what is "not their fault." She noted that the recruitment picture for southern New England (SNL) is dismal, whereas in the Gulf of Maine, lobsters are now "living on dry land." She noted that the politics precluded implementation of a moratorium in the SNL fishery.

Marek asked if a non-environmental metric factor such as land use could have an impact on the population. He asked if a land-use indicator like impervious surface could be included in an assessment model.

Katie advised it can, if we know what the relationship is. The model just needs to know what the relationship is with recruitment, or productivity, or some other factor. You can include such information if you understand the relationship.

Marek stated that they do understand that relationship. He asked if the models can take spatial information, since habitat condition is not the same coastwide, say for the Mid-Atlantic, versus Maine. Can such spatial difference be addressed in such models?

Katie stated, yes, but…… we have been trying to do that with some of the models. It depends on the quality of the data; we need to have good data on the population, as well as the geographic differences. If you have the data, you can incorporate the habitat considerations on a spatial scale. Some of the species are limited due to the species itself, or scale of the data.

Marek noted that is what he figured. Knowing that things are different, is there a preference to combine several metrics into singular indices? For example, if you have multiple indices of integrity, say for invertebrates, and fish, is it preferred to combine them into a single index?

Katie said that the preference for modeling is not necessarily that simpler is better, but the minimal amount of complexity is preferred. If you know that one variable is most important, focus on that one. You should ask whether certain things drive recruitment more than others. If you have the ability to create a single metric, then you have to decide whether to use it qualitatively, or quantitatively. If you have one single metric, that may be easier to model. The short answer is that it depends, on what you think that relationship is.

Jake asked Lisa Kerr what she thought, since she had just published a paper on the topic. Lisa noted that she has been working on bluefin tuna, and they are just getting to the point where they are able to

identify things in a quantitative way. The idea about model complexity is a good one, but the climate changes are going to be one of the biggest challenges that managers will face. She noted that she is on the NEFMC Science and Statistics Committee (SSC), with Jake, and they have had a lot of these discussions. They are grappling with the fact that they need to do these things now. She doesn't see a way of keeping with the simple, single-species models that we have been using, if we want to be effectively managing. She referenced the ecosystem-based models, and noted that models of intermediate complexity (MIC models) may be where we need to go. When she has seen it work, you need to continue status quo, at the same time you are developing more complex models. The processes needs to be concurrent.

Jake noted that he was glad Katie brought up traffic light approaches. He likes them, others hate them. They do begin to incorporate more environmental factors and can serve as a bridge. They can give you insight to what additional factors you may want to explore.

Marek had a quick follow-up. Considering that some of the models are not performing as desired, is the community becoming more willing to use these sorts of models?

Lisa Kerr noted that she hopes so. She does a lot of parallel models to compare to status quo models. She noted that the fact that the discussions are occurring in many different venues, means that we are aware we have to do better.

Marek noted that the discussions have gone on for many years, and he would like to see us try the approach.

Lisa Kerr noted that federal scientists have bought into the approach, for bluefin tuna. They are using the standard model, but are also part of the community using the alternative models. If you aren't part of the community running the assessment, you might not have as much opportunity to affect any change.

Jessica noted that the NEFSC is going through a huge redesign, to try to get the assessment folks, in the same room with the habitat folks. She noted that one other thought she had about incorporating things into models, is the tools that we can use, such as simulations. She noted that in one case, they have used a simulation framework to try to see if modeling things different spatially, would be beneficial. You may need to collect additional data. You need to ask where the breaks occur, in terms of complexity, and the simulation tools can help to discern those. As scientists, we always want more complexity, but we want to be sure that there is a benefit in terms of the advice that we give to managers. A lot of folks are doing such simulation work.

Jake noted in thinking about potential outcomes of this discussion, there is not much clear guidance out there about when to move in this direction. Jake noted that he was thinking about the bottleneck paper we wrote. Penny noted it is a good hint you need to make some changes when the models don't work.

Wilson noted that the USFWS historically produced Habitat Suitability Index (HSI) models which do exactly what Marek was asking about, in that they combine multiple metrics into a single index of habitat suitability. He suggested that there may be some benefit to examining that approach. Further, he noted that we do have some species for which we understand the relationship between habitat and production. He noted that penaeid shrimp are one example of a species where we do have a good idea of the relationship between a key habitat variable, the area of intertidal vegetation, and production. He noted

that we do have to have quantitative understanding of the relationship between the area and quality of habitat, and the abundance or production of a given species or community.

Jake noted the value of simulation modeling versus explicit modeling.

Jay noted that the discussion was very valuable. He noted there are many species about which we know very little, such as the pelagic species, and others for which we know more, like black sea bass which are more sedentary. He noted that hydroacoustics may be a way to count fish in the water column, and it could be stratified by water quality. That may be a promising area. The story with butterfish and the MAFMC is what caused him to think along those lines. If we have better information, we can map the habitat of all of these species and do the hindcasting, and forecasting, and then predict the impacts of changing climate, as well as addition or reduction in the area of structured habitat. He asked what folks think about that.

Jake wanted to make sure he understood Jay's first point, about the pelagic species which are so difficult to sample and understand.

Jay noted that he agrees with Lisa Kerr that we have to keep doing things the traditional way, but for those species which we don't understand at all, perhaps we can move forward with alternatives.

Kent noted that black sea bass as mentioned by Jay, may be a good candidate. He noted that species using hard bottom, or reef habitat, may be more tractable. They have modeled West Indian manatees in FL, knowing what discrete areas they depend upon. Also, you can use three-dimensional modeling to get at the question.

Jake noted that there is an important aspect to migration as well. There is a behavioral element there, and he asked Graham to comment.

Graham noted that he wanted to follow up on Jay's acoustic survey comments. Graham noted that with acoustics, especially for pelagic species, you have to be there, everywhere, all the time. With current surveys, they are constrained by when they can get ship time, and by where the ship goes. There is some real promise for those techniques. They have contracted with ten lobster vessels to collect the same data over a wide area to have concurrent data. Also, species identification is an issue. We have to ask if we are interested in species composition, or just the biomass. He noted that when commercial fishermen see baitfish in the water, they begin dropping their lines.

Jay noted that he had a quick follow-up. He appreciated the challenge of needing to be everywhere, all the time, and noted that the annual groundfish survey was only a tiny snapshot of what is really going on in the environment and the community.

Graham stated if we could have a hundred vessels, collecting acoustic data, then we could conceivably have a dynamic model.

Jake noted that the NEFSC has discussed trying to move to commercial vessel data gathering for securing more spatially-explicit information.

Wilson noted that he thought his colleague Chris Taylor at NMFS-Beaufort published a paper in Science on the new acoustic technology. We need better datasets and could perhaps begin with continuous

water quality monitoring, which is getting more sophisticated, and cheaper. He noted that a lot of the analytical work trying to discern relationships between species and water quality is based on at-best weekly sampling, which really doesn't provide us with an adequate picture of what conditions really are. We need widespread, continuous, water-quality monitoring stations.

Lisa Kerr suggested that we can do more to bring in multiple data streams, into the assessment processes. Our efforts typically get winnowed down to one single model, when we often have looked at multiple ones.

Jake noted that one thing the NEFSC points out is that they are on the hook for a single number. At least at the Councils, they are now trying to account for uncertainty and risk, and that is where the other approaches may have been done, come into play. In the assessment process, you may have two models which are neck-and-neck, and one of them may get lost.

Penny noted that when you have stock status from the model that has been blessed, and then you have indicators which may be informative as well. There may be three or four management units, and the model may not capture what is going on in all of them.

Lisa Kerr noted that with harvest control rules, then you add triggers, and buffers, and legally you have to winnow it down.

Jake noted that he would recognize Wilson, then we will take our break and Graham.

Wilson noted that you also have to deal with the socio-economic, and cultural aspects of the assessment process, which tend to result in the buffers being smaller than needed in his opinion, to protect the stocks, because stakeholders with an economic interest in the outcome, want to maximize the allowable harvest.

Graham noted that age-length keys are often static, whereas we need to have current information that reflects current growth and maturation rates. He gave an example, for haddock. They looked at the age-structure, and found that the fish were just older at smaller sizes today, that the productivity really had not changed. Monkfish is another assessment that we know is based on less than adequate aging data.

Jake agreed that was an important point. Maturity and size-at-age are updated annually, for some species. You are varying some of these factors through time, so in those cases you may not necessarily need the environmental relationships.

Graham noted that the aging needs to be accurate, and sometimes aging methods can change or improve.

Katie noted that she wanted to touch on the question of how open assessment scientists are, to this sort of new information. She noted that they are building the models to answer management questions, so they are interested in getting the models right, so there is a lot of caution about the information going into them. There are a lot of sources of uncertainty. We want to be certain that we have the best information.

12. **Technology Break** (20 minutes) 9:34 a.m.

Jake asked us to reconvene at 9:50 a.m. Jessica noted that she and Toni had picked up croissants and scones for the break.

13. **Set 2017 Work Plan** (*L. Havel*) 9:50 a.m.

Jake reconvened the meeting and turned the floor over to Lisa Havel for discussion. Lisa noted that the Strategies have to stay exactly the same, but the tasks we can alter if we need to do so. Lisa walked us through her draft.

Task 4.1.2 remains the same. Task 4.1.3, we added "as new data becomes available." Wilson asked about the Atlantic sturgeon fact sheet, given that NMFS has proposed Critical Habitat. But, after discussion we decided to wait until NMFS puts out a Final Rule, which we were told wouldn't happen until May or June of next year. Marek asked what the rationale was behind waiting on NMFS to make that final designation. Wilson explained that NMFS has done a lot of work to review the literature and determine which habitats are really critical for Atlantic sturgeon, so he thinks it would be important for us to note where those habitats are located, in the fact sheet. Toni asked that we revise the Fact Sheet for Atlantic sturgeon to include the fact that NMFS has proposed Critical Habitat for it. Wilson will make that revision.

Action Item: Wilson will update the Atlantic sturgeon habitat factsheet once NMFS puts out a Final Rule in May/June. This will include a link to NOAA.

Cheri noted that she would be revising the sheet for Northern shrimp.

Action Item: Cheri will update the Northern shrimp habitat factsheet.

Jay suggested that the one for Atlantic menhaden also needs revision.

Action Item: Ben will update (the first section of) the menhaden habitat fact sheet.

Task 4.1.4: will remain the same. Task 4.1.5 was added, to co-sponsor an Artificial Reefs Symposium at the American Fisheries Society (AFS) 2017 annual meeting in Tampa, FL.

Strategy 4.2; Task 4.2.1 was not changed; Task 4.2.1, no change (Restoring America's Estuaries, AFS); Task 4.2.3, no change, but we discussed topics.

2017 Habitat Hotline

Lisa asked for recommendations for Habitat Hotline articles. Wilson noted that next year will be the 20th anniversary of the ASMFC SAV Policy, so that could be one article. Wilson noted that we will be talking about it shortly, but we can say whether we are doing an evaluation of the policy, and also whether we are planning to revise the policy. Jay asked if Wilson was suggesting that SAV be a theme. Wilson noted not necessarily. Kent noted that there was plenty of information to feed such a theme. Dawn indicated that she can do an article. Mark noted that he can generate one as well. We noted that SC and GA are SAV-challenged. Marek asked what takes that habitat function in those states. We noted it was oysters. Wilson noted that we could push into the tidal freshwater, and include tidal freshwater marshes, to bring SC and GA into the issue.

Jake noted that he was hearing a lot of support for SAV, but are there others?

Jay stated, chemical cues could be one. Jake noted that it would have to be broader. Kent noted that the diadromous species are particularly sensitive. Wilson and Jake noted that we could add acoustic cues as well, since those are important for a lot of species and for reef fish larval settlement especially.

Jessica suggested that we could make the issue on the importance of the intertidal zone, so we would include SC and GA.

Jake noted that we could include SC and GA still, and discuss the habitats available there.

Kent noted that he is willing to do an article on the brown algae in the Indian River Lagoon.

Jake noted that someone had mentioned kelp. Penny and others noted that it is present off NE and is also being farmed. Dawn cautioned us against highlighting it, because some quarters think it is the be-all, end-all, to dealing with nitrogen issues. Jake thought that perhaps we should avoid controversial issues; Cheri disagreed, since we are supposed to educate the public.

January noted that we can have an article on the conservation mooring since that would fit nicely into the SAV theme. Cheri noted that Chris was going to write an article on that anyway.

Jake noted that it looked like SAV may be the thematic topic. He asked Lisa Havel to circulate the potential topics around to the HC and solicit feedback. Jake noted that Lisa was going to take some time off to get married. Kent noted that we need a supervisor for the issue.

Michelle Bachman volunteered to be the lead for the issue. Cheri and others noted that she has to herd cats to produce the issue on time.

Jake noted that we are way ahead of where we were last year with regard to planning and producing a Habitat Hotline issue. We discussed having a January-February conference call and then finalize the list of articles.

Wilson noted that we could do another one on climate changes and Fisheries. The HC felt that we had done one on that too recently to include that as a possible topic.

Cheri noted that we are still needing state/federal updates for the 2016 issue.

Lisa Havel asked that we have first updates for feature articles for the 2017 issue either by the spring meeting, or July 1. Agency updates would still be due by September 1.

Action item: Lisa will circulate the 2017 HH list to HC for review, and will put together a conference call or January or February to move this issue forward.

- **Habitat Management Series: Living Shorelines and SAV**

Task 4.2.4: this one was revised to reflect the fact that we may want to revise the Living Shorelines and SAV Habitat Management Series documents.

Jake asked if we decided that we were going to finish the Aquaculture document this year (2016), or next year. Kent, Marek, Eric, Dawn and Russ are on the subcommittee. Marek thinks we can finish it up by the end of this year, to be presented to the Policy Board at the winter meeting.

Jay noted that we have to decide between SAV and Living Shorelines.

Wilson provided his draft document with questions for an SAV Policy evaluation survey, for one potential approach. He noted that he had just taken the recommended actions from the policy, and turned them into questions. He noted that the policy had called for regular evaluations of the policy, but to his recollection, no evaluation was ever conducted. He noted also that the policy actually contained some potential SAV compliance measures, but again to his (and Toni's) knowledge none of these had ever been incorporated into a Commission FMP for a SAV-dependent species.

Wilson, Mark, Jay, Eric, January, Dawn, Jimmy and Kent were appointed as a subcommittee to consider Wilson's draft and any proposed approaches for conducting an evaluation of the policy.

Toni suggested that we put together a presentation to the Policy Board at their February meeting, for a plan of attack. Jake clarified, do the evaluation first, then put together a presentation to the Board. Jake concurred that we should go the direction we decide to go.

Wilson wondered about having a conference call to determine how much time we need to conduct the evaluation. He thought that we need to finish the evaluation first.

Jake suggested that there was a level above the evaluation we needed to address, in order to get input from the Policy Board.

Michelle agreed with Wilson that we need more information first.

Jake suggested that we take the outline, or bullet points, to the Policy Board, first.

Toni noted that the SAV Policy dates from 1997, and she has been there since 2003, and she has never used it. That is not to say what the states may or may not have done with it.

Dawn and Jake suggested that we have a call sooner, rather than later, to discuss further how we want to proceed.

Action Item: Lisa will set up a conference call in November or December with Wilson, Mark, Jay, Eric, January, Dawn, Jimmy, and Kent to decide on next steps for the SAV Policy Document Update. First we should decide whether we want to make changes to the Policy Implications and present it to the Policy Board in February. Do the recommendations make sense? What do we want to change?

We returned to the wording of Task 4.2.4: it was revised to delete 'Living Shorelines'.

Strategy 4.3: All ACFHP, some minor wording changes made by Lisa.

Task 4.4.1: no change; Task 4.4.2: an ACFHP one; Task 4.4.3: ACFHP; Task 4.4.4: ongoing. Jake noted that we talked yesterday about having Tina come and talk to us about how ASMFC is using social media. Lisa has that written down as an action item for next year.

Jake noted that we had some discussion yesterday, and we didn't resolve how we wish to identify things on which we want to comment. Kent asked if we wanted to wrap that into the estuarine mitigation discussion. Jake noted that what we discussed yesterday was the fact that we don't really have a mechanism to identify issues that we do want to comment upon.

Toni noted that if we identify things that are of interest to us, perhaps we can get on the appropriate list. We need to have more than 30 days advance notice. For things that we are unclear upon, we can set up a committee to assist Lisa with identification of issues.

Wilson suggested that FERC hydropower projects are one category on which the ASFMC-HC should take a position. Toni noted that the Policy Board really needs to weigh in on that issue. Toni suggested that one approach may be to develop a generic letter that could be used. They are reluctant to comment on issues affecting only one state.

Jake suggested that the HC should make the case for why the Policy Board should be commenting on a particular action.

Oliver Cox suggested that one type of document on which the ASMFC should be commenting, would be comprehensive plans which are filed with FERC. Wilson liked that idea a lot and agreed with Oliver that would be a good category for the HC to review.

Jake suggested that we change the wording of Task 4.4.1 to add "plans, policies" to the list. The change was made.

Jessica offered to send to the HC examples of the MAFMC comment letters. She noted that many of these entail hammering out language with the Council members. She noted that they can't wait for every Council meeting, to develop the letters. The U.S. Army Corps of Engineers letter on living shorelines, was sent out in less than a week. They handled it electronically. If you want to be able to comment on these things, that is the way you have to do it efficiently.

Action Item: Jessica will send Lisa examples of letters that the MAFMC has written.

Jake noted that is a good point and he noted that we have a lot of that policy guidance in ASMFC writing already, albeit scattered. It has all been reviewed and approved by the Commission.

Jessica stated that they stick to those policies and themes.

Jake stated that in conjunction with what Toni is suggesting, ready-made templates will address what we want to achieve.

Lou asked about having a list of activities of concern.

Jay noted that we do have a process in place to get a letter out the door, which could be backstopped by an approved ASMFC document. Jay noted that to him it still feels that we need some guiding criteria. He suggested that any programmatic NEPA document affecting Commission-managed species, may warrant comments.

Jake noted that we have criteria, i.e., it has to have a big effect on ASMFC-managed species. Council actions would fall into that category. Jay felt that anything on which the Councils are commenting, should be something on which we are commenting as well.

Michelle noted that the three of them (she, Jessica and Lou) see these comment letters on projects routinely, and share the drafts with each other.

Jake asked if we should form a group to come up with some list of triggers. Lou, Jessica and Michelle, and Pace were named as a subcommittee to consider this further.

Action item: Lisa will work with Lou, Jessica, Michelle, and Pace to move forward with identifying themes on which ASMFC should be commenting. She will also compile all policies and recommendations from the habitat management series documents in one document.

Task4.5.1: no change. Task 4.5.2, the wording was changed.

Jessica asked if we didn't want to add something to the text, beyond just GIS. Wilson agreed that was a good point and noted that the language didn't really capture our earlier discussions about modeling and ecosystem factors, and HSIs and species-habitat-production relationships.

Jake asked about the role of the ASMFC Management and Science Committee. Wilson and Toni explained the relationship between the three committees (ASC, MSC and HC). Toni felt that the Assessment Science Committee (ASC) would be the better one for us to communicate with regarding integration of environmental factors into assessments. She noted that the MSC has not been very active as of late.

Jake suggested that we just ask Shanna, and/or Toni, for some sort of annual update. Lisa was asked to add a Task 4.5.3, to capture that thought.

Michelle asked if we might not want to have some presentation from the NEFSC about this. She noted that she had received a very interesting e-mail message from Kevin Friedland, who seems to be working on this for some species.

Jake suggested that we say, "communicate with ASC and other relevant entities to better link habitat and stock productivity for managed species" (per suggestion from Jessica). Jay noted that this would cover restoration as well.

Eric asked, under Task 4.5.2, if states have lists of all the habitat data they collect? He noted that RI had begun such a list, in part because of the winter flounder exercise that ACFHP and NALCC had done. He noted that one thing he was discussing with Lisa, is that in general assessment scientists are not aware of the existence of those data. There may be some useful discussions about what sort of data should be collected. He asked what ACFHP might be doing on that one.

Lisa Havel noted that we had included a task to identify what we still needed to know, for ACFHP purposes. It kind of gets at that task. This one was a carry-over from our 2014 plan. Lisa wasn't sure what the original task was seeking.

Eric asked if states had a list of all the data they have. Kent noted that Florida does. The Florida Wildlife Research Institute (FWRI) has a data center and they warehouse all the data, both from universities and the agency, for salt marsh, estuaries, submerged nearshore habitat and so forth.

Jake asked Eric if we were good on this topic.

Cheri indicated that NH's only comprehensive compilation was their Wildlife Action Plan (WAP). She noted that all the states have those. Wilson noted that NC has the Coastal Habitat Protection Plan (CHPP) as well.

Task 4.6.1: ongoing. Task 4.6.2 we prepare a table in 2017, comparing what all the states are doing, then make recommendations.

Task 4.6.3: The wording stayed the same.

Jessica asked if this one wanted to be targeted to just Commission committees, or other entities as well. She suggested that we broaden the language. Jake thought that made sense. Lisa added "and partners." Toni noted that Atlantic menhaden should be finalized by early August. Northern shrimp is coming. All the states will be looking at the Shad and River Herring Habitat Plans this year. Red drum, spot and Atlantic croaker assessment reviews are coming. Cobia will use the SAFMC Essential Fish Habitat information. Tautog hasn't been reviewed in years and is coming up in February.

Jake stated that it seemed odd that the HC has not been asked to look at the American Shad Habitat Plans. There was some discussion as to whether the HC members were connected with their corresponding Shad and River Herring TC members. Some are, some aren't.

Action item: The Habitat Committee should connect with their TC counterpart to look over the American Shad Habitat Plans. If they do not know who to contact, please ask Lisa.

Wilson noted that he and Jeff Kipp had discussed a while back whether the ASMFC American Shad Habitat Plans would qualify for filing with FERC as comprehensive plans. They still need to have that conversation.

Toni noted in the short run, she needs designated folks to look at the tautog and Atlantic menhaden habitat sections.

Cheri suggested that we need subcommittees: For tautog, Penny, Jay (and Kate Wilkie) volunteered. Cheri suggested that the section outline be provided to them. Toni noted that the draft FMP for public comment will be approved at the February meeting.

Lisa asked for one more person on the subcommittee. We volunteered Russ Babb, since we are pretty sure that NJ has tautog. Toni noted that all four regions are overfished, with overfishing occurring. Jessica stated that Russ agreed to serve.

***Note: A subcommittee led by Penny updated the tautog amendment last year, so Lisa sent her what was already edited to make sure that there are no further edits. She will share it with the subcommittee once she receives Penny's approval.*

Jay asked about someone at the GARFP or NMFS who could help. It was noted that was a state-only fishery.

Jake suggested that Marek would be the logical person for Atlantic menhaden. Marek noted that he hadn't done a good job on the Aquaculture document. Oliver indicated that he would be willing to serve. Menhaden will be due in August.

Action Item: Lisa will work with Oliver, Cheri, Jay, and Kate on updating the Atlantic menhaden plan.

14. **Other Business** 11:00 a.m.

We had a brief discussion of the Florida estuarine mitigation bank project. It is still pending Kent noted; the permits have yet to be issued. Wilson noted that he was fine with deferring that discussion to the spring meeting. Kent suggested that the context in which we may wish to discuss this, is when such mitigation banks are being established on private lands. He noted that the one in Florida is a highly political one, and is occurring on private lands. In such situations, it may not be appropriate for us to comment. However, if someone wants to do something in public waters, and no one else is taking any action, then the funds applied to such banks, just build up and sit there.

Jake noted that this one sounds a bit more unusual, so perhaps it does warrant more discussion. Jake concurred with making it a spring agenda item.

Mark suggested that if we discuss it in the spring, we should have someone from the Corps of Engineers to come and talk to us.

Lou noted that there are a lot of estuarine mitigation banks, from VA up to New England. Some are saltmarsh.

Jay noted that TNC has a lot of interest in this. He felt that TNC has a lot of interest in this, and would be willing to have that conversation.

Action item: We will discuss estuarine mitigation banks at the spring meeting. We can invite someone from the Army Corps of Engineers to discuss it with us. Mark, Kent, and Pace will move this topic forward for the meeting.

Dawn noted that for those states with Artificial Reef programs, they were just advised that they now have to undergo consultation regarding Atlantic sturgeon. She suggested that states look at their permits to make sure that they did all of the appropriate assessments.

January noted that they are having a similar issue with their ARs off Georgia, with regard to Northern right whale. She noted that the Corps admitted they dropped the ball on that one. The Corps didn't even know who the whale contact was, at NMFS.

Dawn noted that they need to coordinate with both state and federal agencies, to be able to move forward, but she feels stuck in the regulatory armpit on this one.

Jake asked if we have any idea where the spring meeting will take place. No location or dates have been established. Usually, Kent noted, the meetings have been in April-May. Jekyll Island, St. Simons Island,

Manteo (if HB2 has been resolved), and Newport/Providence. Cheri indicated that she would suggest New Hampshire. Kent was fine with Rhode Island. Jake asked about the Great Bay NERR. Cheri noted that Portsmouth has plenty of hotels.

Lisa noted that the next annual meeting will be in Virginia.

Toni noted that having the committee meetings back to back like this with the annual meeting was done for the benefit of some of us (Cheri and Wilson) who also serve on multiple Management Boards. She asked particularly about the fall meeting. She noted that Cheri and Wilson have to be in board meetings, if we meet in conjunction with the annual meeting.

Cheri noted that we can't get out of the Board meetings.

Jake noted that we had talked about this in the spring. Most of the HC members aren't affected.

Wilson noted that if they could schedule the ACFHP and HC meetings concurrent with Boards on which he and Cheri don't serve, that would work, but Toni noted that wasn't possible.

Wilson noted that he liked the separate meeting format, since it enables him to fully participate.

Jake noted that he would come to the annual meeting, if he needs to do so. Toni indicated that she would really like to have the HC chair present to make the report to the Board.

January noted that she would like to travel, so it is okay with her to keep them separate since she would be willing to attend both weeks.

Jake noted it sounds like everyone is okay with keeping the meetings separate, but we can discuss more later.

Action Item: Lisa will write a letter of appreciation to GMRI for allowing us to use their facility.

The meeting adjourned after congratulating Lisa again on her impending marriage and giving her a round of applause.

15. **Adjourn Day 2** 11:30 a.m.

Action Items

Page 4
Action Item: Lisa will share the list of current SDC members with the Habitat Committee so they can identify participants that might round out the group.

Page 8
Action Item: Lisa will work with Toni and rearrange and add authors to the Sciaenid Habitat Source Document. Jay will be first author and all others will be alphabetical. Lisa will also add a preferred citation.
Action item: Lisa will send a reminder in the spring to make sure everyone's fact sheets are up to date.

Page 9
Action Item: Lisa will work with Toni to try and secure Tom O'Connell and Phil Colaruso as Habitat Committee representatives.

Page 12
Action Item: Lisa will work with Marek, Kent, Eric, Russ, and Dawn to move the Aquaculture document forward. She will try to find the notes from Port Jefferson to refresh everyone's memory on the original scope.

Page 14
Action Item: Lisa will work with Tina to see if she can present to us at the spring or fall meeting next year on our social media presence and outreach, and how to better reach out to our audience.

Page 22
Action Item: Wilson will update the Atlantic sturgeon habitat factsheet once NMFS puts out a Final Rule in May/June. This will include a link to NOAA.
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Mitigation Bank Pending Approval for Florida's Mosquito Lagoon

| August 22, 2016

An Environmental Resource Permit (ERP) application has been submitted to the St. Johns River Water Management District (SJRWMD) and the U.S. Army Corps of Engineers (Corps) for development of the 315 acre Webster Creek Mitigation Bank. Webster Creek Development (project applicant) and Bio-Tech Consulting, Inc. (project consultant) are proposing wetland restoration, enhancement and preservation at the bank in exchange for credits that will be sold off to developers from Jacksonville to Sebastian Inlet.

The project is located in southern New Smyrna Beach and is within Mosquito Lagoon (an Outstanding Florida Water) and the Mosquito Lagoon Aquatic Preserve. According to the Prospectus report submitted with the ERP application, the goals of the project include, (1) elimination of conflicting land uses, (2) hydrologic restoration through filling ditches and the installation of ditch blocks, (3) herbicidal and/or mechanical control of nuisance/exotic plants and (4) the establishment of conservation easements over the mitigation bank lands.

Opponents of the project are concerned with issues such as the use of ditch blocks to slow the water flow, access restrictions, avian population impacts, increased algae blooms, and harmful impacts to the marine life from hydro-blasting the spoil piles and ditches that were dug in the 1950's for mosquito control. Many are also voicing concern about a potential conflict of interest with John Miklos (Bio-tech president) serving as the project consultant and also as Chairman of the SJRWMD Governing Board. There are also concerns voiced by Volusia County as to how much land is actually owned by Webster Creek Development and how much land actually belongs to the state of Florida via state-owned sovereign submerged lands.

If you would like to voice your opinion on this project, please contact the SJRWMD and Corps below. The Corps has extended its public comment period until August 24th. You may also contact Frank Gidus atfgidus@ccaflorida.org for more information.

SJRWMD Contacts:
Nanette Church, 321-984-4902, nchurch@sjrwmd.com.
Gretchen Kelley, 321-676-6602, gkelley@sjrwmd.com.
(Please reference permit application number 146336-1 in your correspondence).

U.S. Army Corps of Engineers Contact:
Ms. Amy Thompson, 904-232-3974, Amy.D.Thompson@usace.army.mil, or at the following address:

Department of the Army
Jacksonville District Corps of Engineers
P. O. Box 4970
Jacksonville, Florida 32232-0019

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_{30}-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 updated 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, an 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 115th 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 were 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

	Draft Completed	Photos	Feature Articles	Contributor
1			Introductory article about SAV	Wilson to contact Judd Fonseka
2			Brown algae bloom in IRL	Kent
3			History of NC/VA SAV Team	Wilson to contact Dean Carpenter
4			ACFHP Conservation mooring project	Lisa to contact Chris Powell
5			Innovative techniques for documenting and monitoring SAV	Wilson to contact Joe Luczkovich
6			Temperature and SAV in NY	Dawn to work with CCE
7			Blue carbon	Mark to contact Phil Colaruso
8			Mapping eelgrass loss in MA embayments	Mark
9			SAV on the Lower Eastern Shore Project	Jay and VIMS
	Draft Completed	**Photos**	**Sidebars**	**Contributor**
1			Why GA/SC don't have SAV	Denise and/or January
2			Summary of Policy Statement Questionnaire and/or summary table	Lisa
3			Point to SERO's seagrass bibliography	Lisa
	Draft Completed	**Photos**	**Updates on Habitat Activities** 2-3 paragraphs summarizing activities in 2017	**Contributor**
1			Maine	TBD
2			New Hampshire	Joshua Carloni
3			Massachusetts	Mark Rousseau
4			Rhode Island	Eric Schneider
5			Connecticut	TBD
6			New York	Dawn McReynolds
7			New Jersey	Russ Babb
8			Pennsylvania	Ben Lorson
9			Delaware	Jeff Tinsman
10			Maryland	Marek Topolski
11			Virginia	Tony Watkinson Jay Odell
12			North Carolina	Jimmy Johnson

13			South Carolina	Denise Sanger
14			Georgia	January Murray
15			Florida	Kent Smith
16			ACFHP	Lisa Havel
17			NEFMC	Michelle Bachman
18			MAFMC	Jessica Coakley
19			SAFMC	Roger Pugliese
20			NOAA Fisheries	Lou Chiarella Pace Wilber
21			USFWS	Wilson Laney John Gill
22			USGS	TBD
23			EPA	Suzanne Ayvazian

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

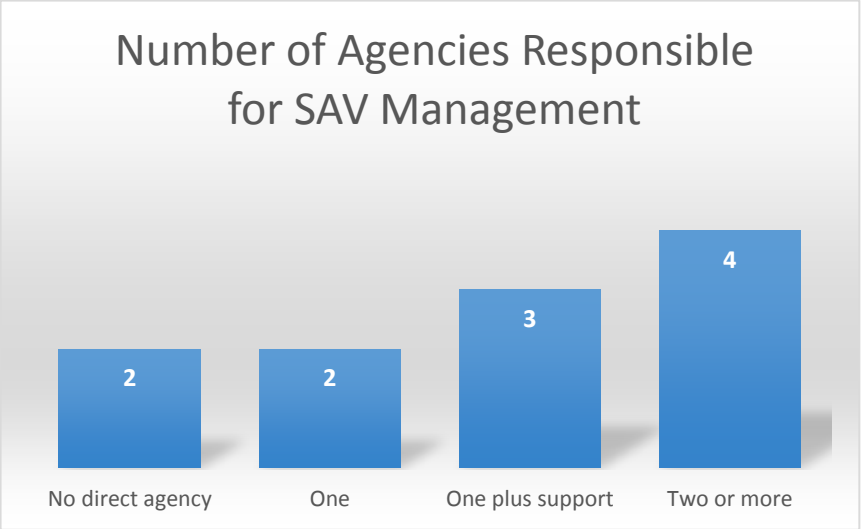
Please send drafts to Michelle Bachman mbachman@nefmc.org and Lisa Havel Lhavel@asmfc.org.

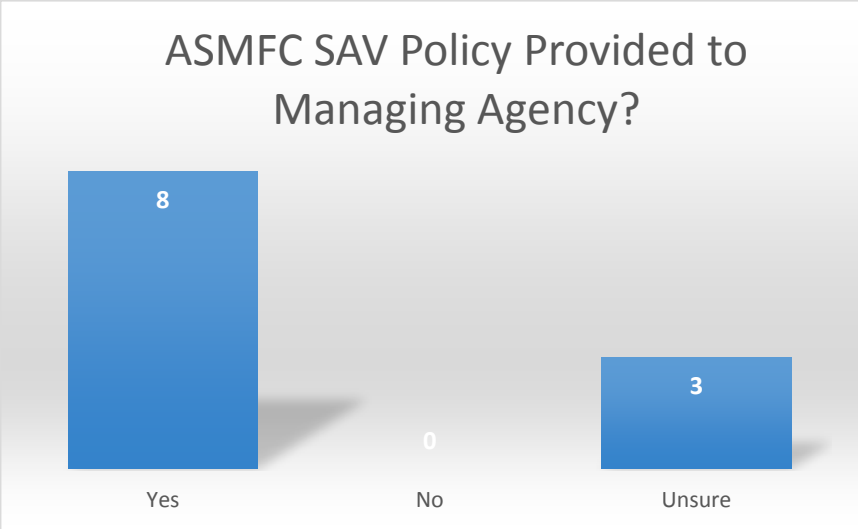
- Discuss status at spring meeting
- Articles due on July 1st
- State/Agency Updates due on September 1st
- Final drafts are due on Nov. 9th

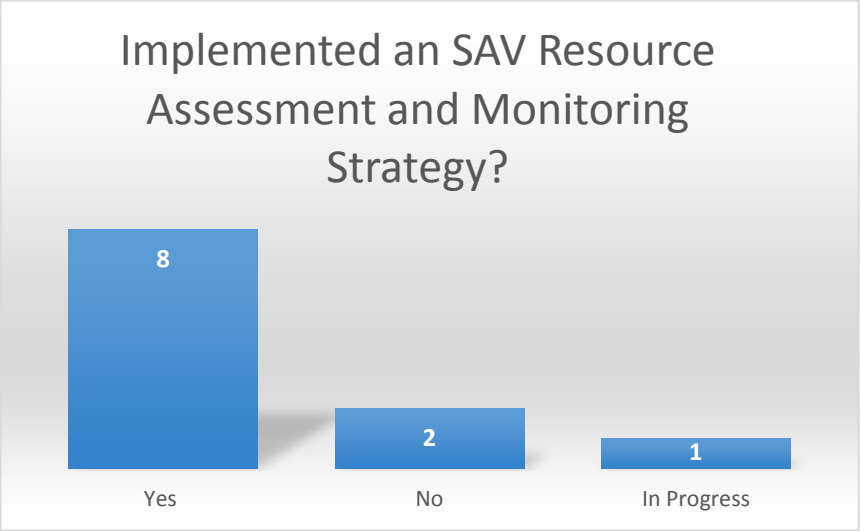
Timeline	
Jan/Feb	Conference call to finalize list of feature articles
July 1	Feature article drafts due
Sept. 1	State updates due
Mid-Sept.	HC Review of drafts
Nov. 9	Final drafts due

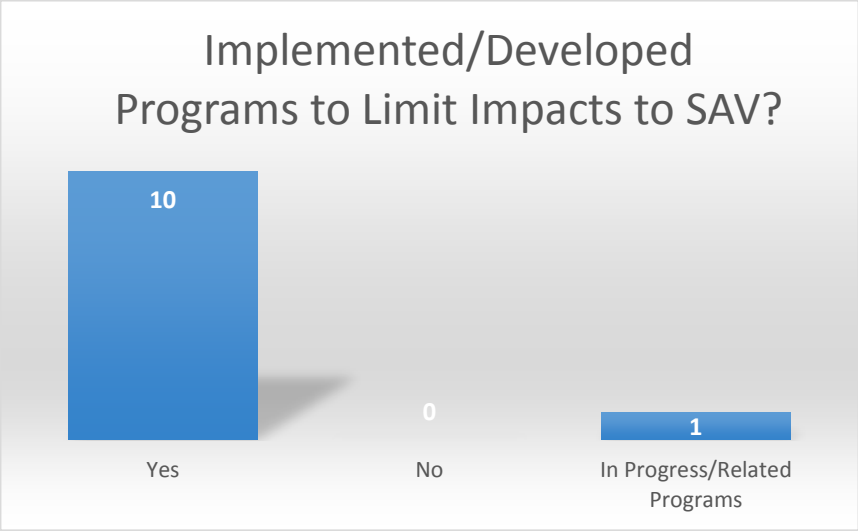
Nov-Dec 2017	Design layout Publish

ASMFC SAV Policy Questionnaire Responses: State Entities









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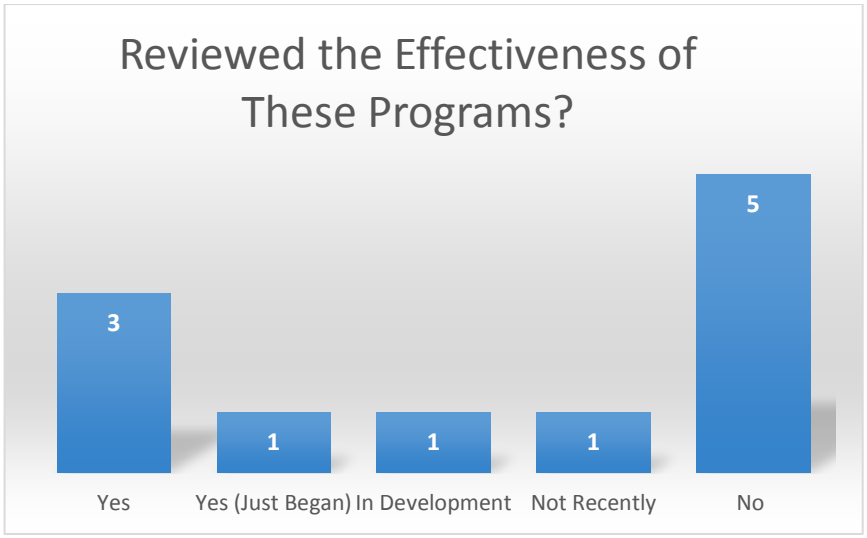

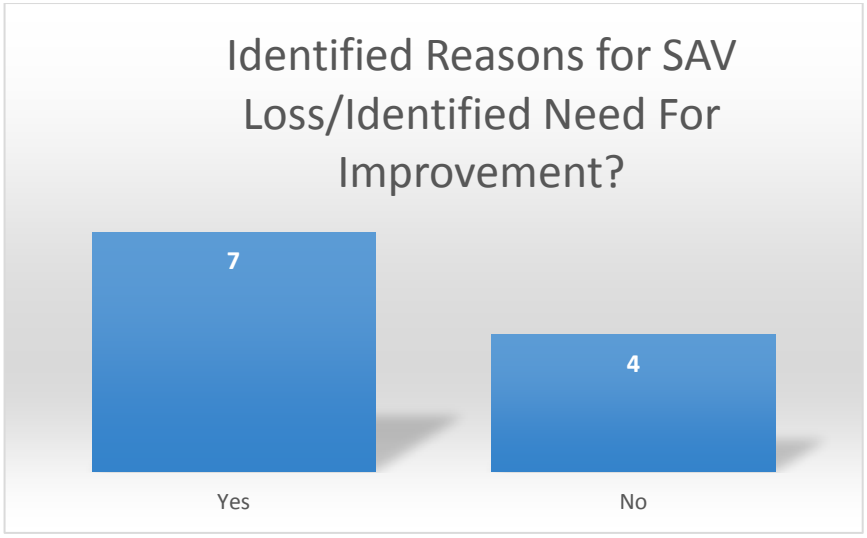

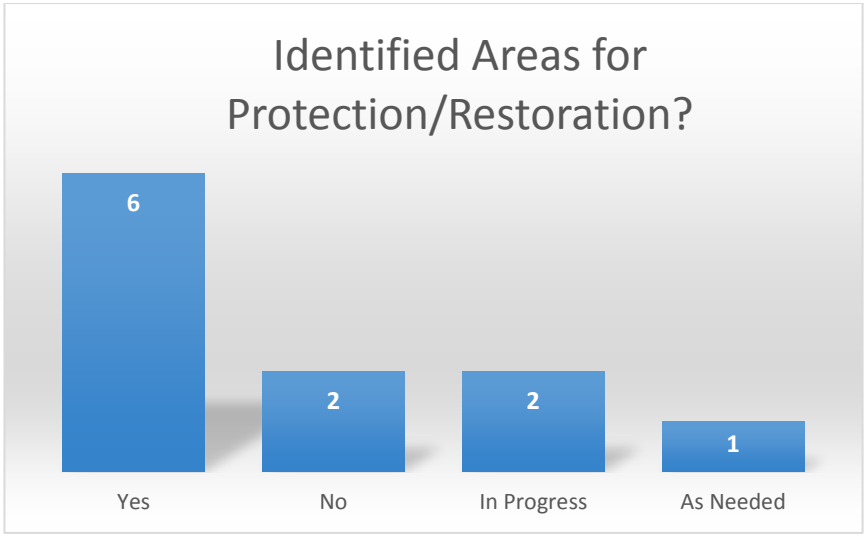

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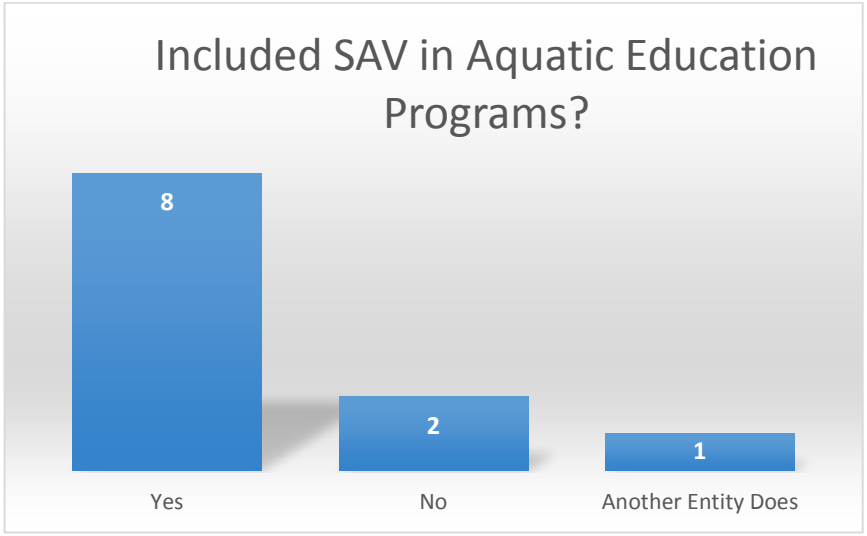

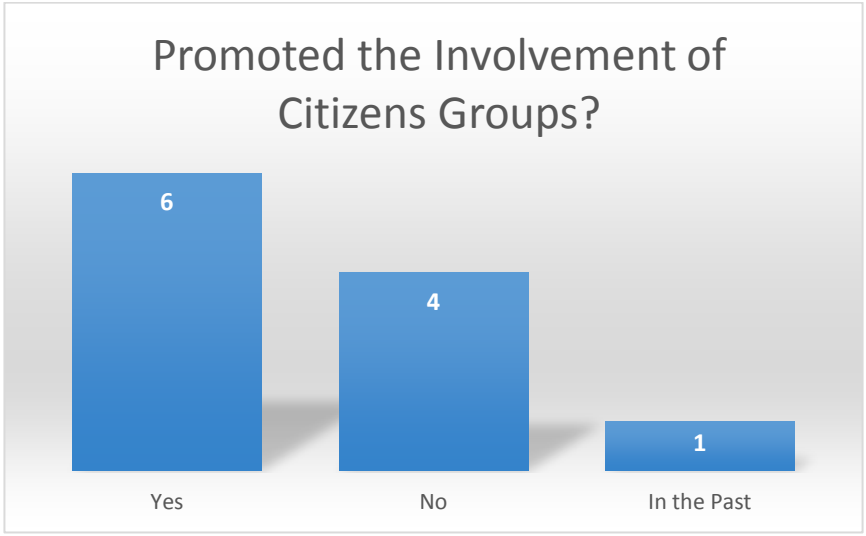

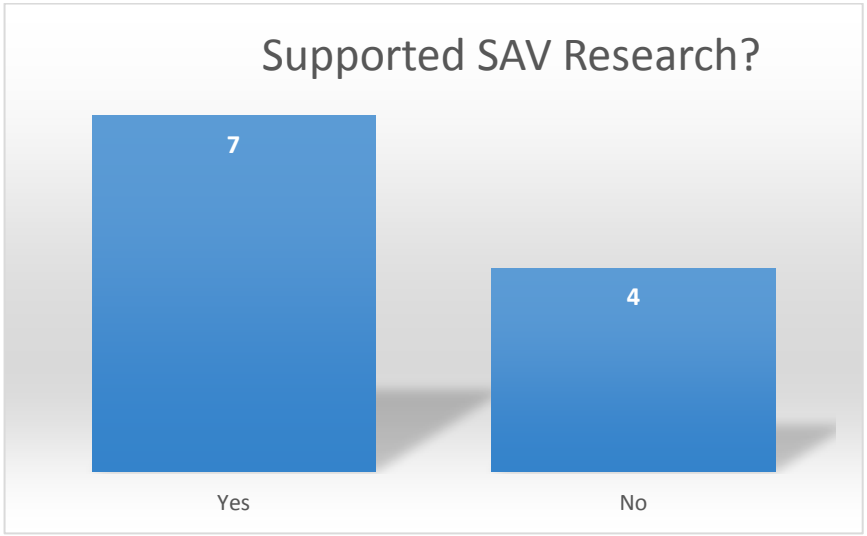

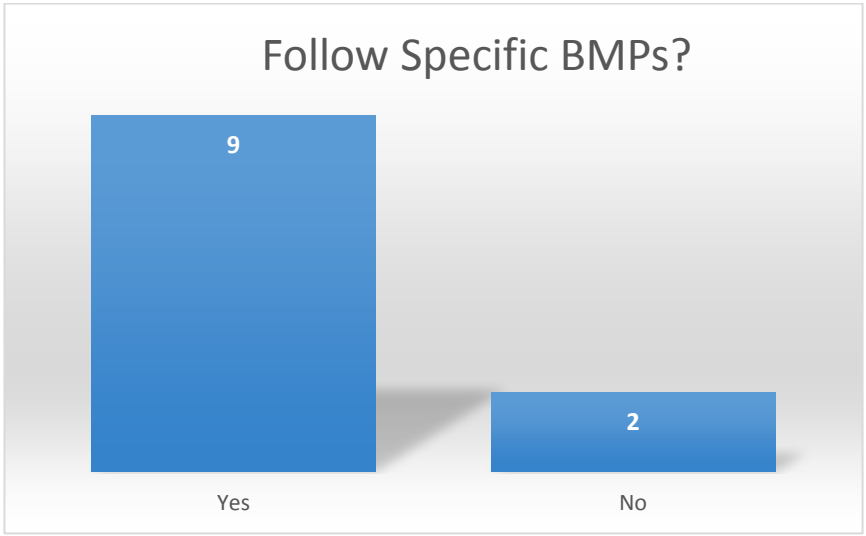

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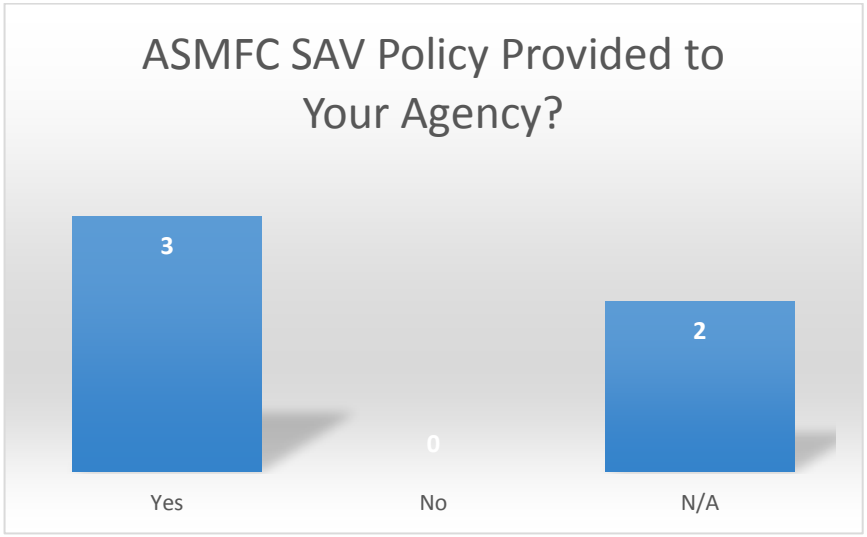

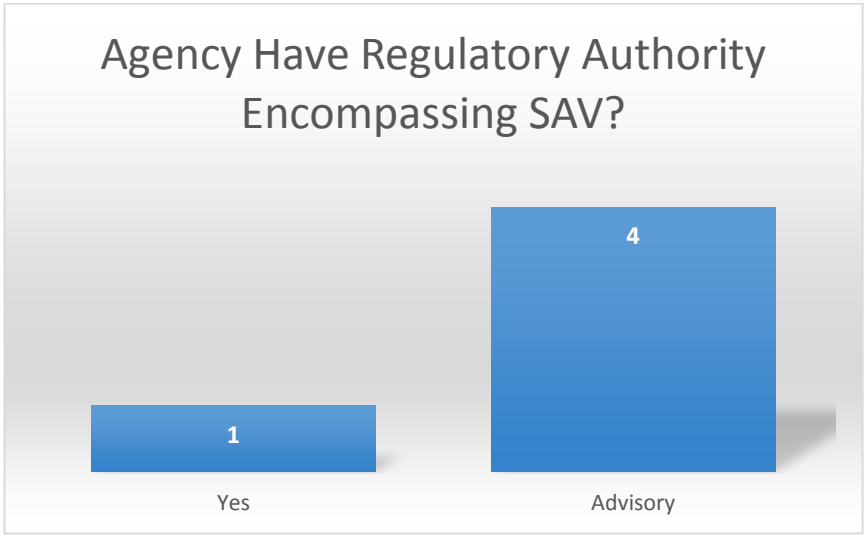

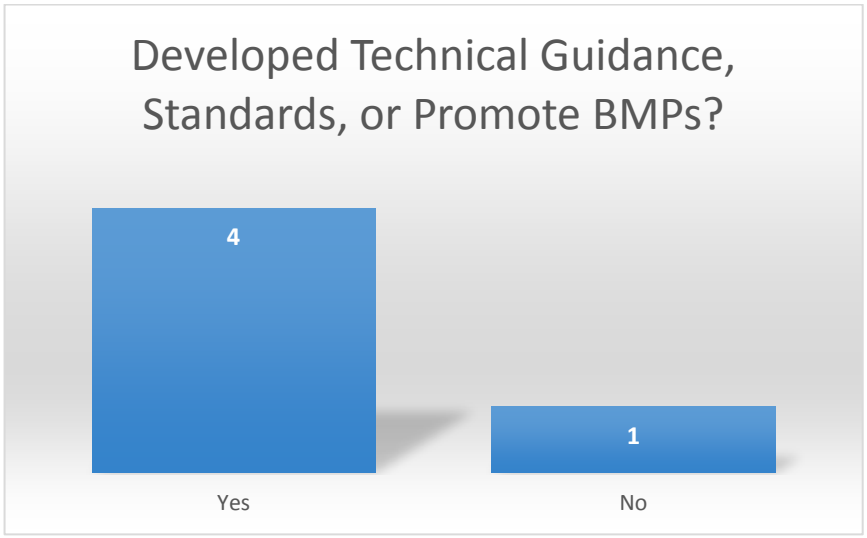

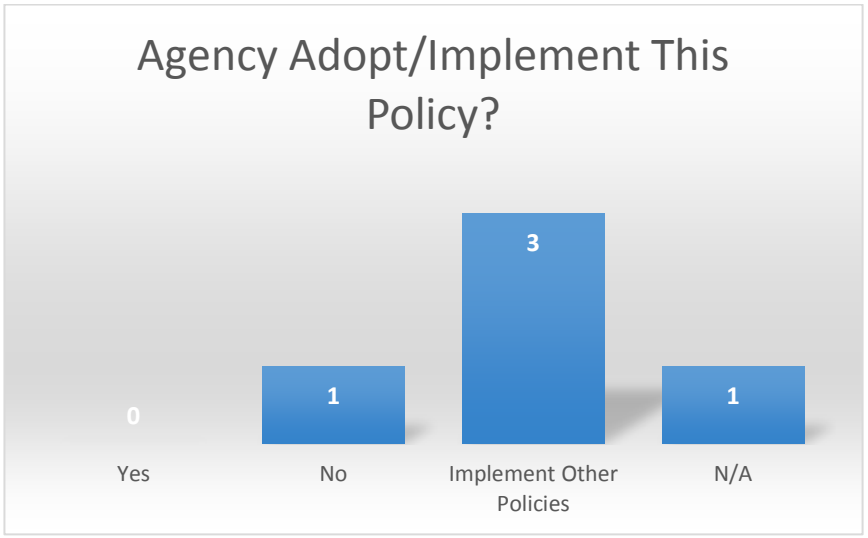

Atlantic States Marine Fisheries Commission

Habitat Committee Guidance

Approved by the ISFMP Policy Board
August 2013

Healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015

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A publication of the Atlantic States Marine Fisheries Commission pursuant
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The Habitat Committee Guidance was drafted by Megan Caldwell, a contractor for the Commission's Habitat Program, with review and contributions from a working group of the Habitat Committee, which consisted of the current Chair, Kent Smith, current Vice Chair, Jake Kritzer, and past Chairs, Bob Van Dolah and Wilson Laney. The Habitat Committee reviewed and approved the document during their May 10, 2013 meeting.

This document is modeled after the Commission's *Committee Guidance and Assessment Process* document (February 2013). Section 5.0 (Meeting Policies and Procedures) and 6.0 (Communication Policies and Guidelines) are excerpted directly from the Committee Guidance document. Portions of Section 3.0 (Committee Responsibilities), Section 4.0 (Committee Tasking) and 5.0 (Committee Expectations) have been included and combined with more specific Habitat Committee guidance in Section 4.0 (Committee Expectations) of this document. If changes are made to the *Committee Guidance and Assessment Process* document, those changes will take precedence over the content of this document. The Habitat Committee will maintain this document and update it as needed to comply with the *Committee Guidance and Assessment Process*, as well as to modify any policies specific to the Habitat Program. Any major changes to this document must receive approval from the Interstate Fisheries Management Program (ISFMP) Policy Board.

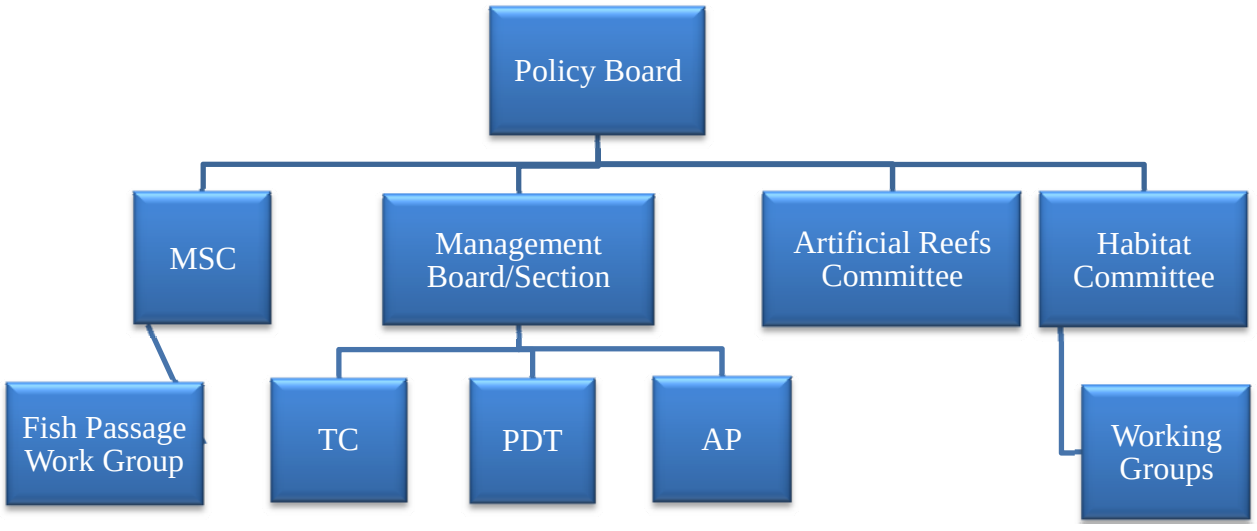
TABLE OF CONTENTS

1.0 INTRODUCTION

The Habitat Program of the Atlantic States Marine Fisheries Commission (Commission) is a branch of the Interstate Fisheries Management Program (ISFMP), which serves to support and supplement the efforts of the ISFMP Policy Board, fisheries Management Boards and Technical Committees. The goal of the Habitat Program is to identify, enhance, and cooperatively manage vital fish habitat for conservation, restoration, and protection, and supporting the cooperative management of ASMFC and jointly-managed species. Many of the Commission's committees are involved in working towards achieving this goal, but the Habitat Committee reports directly to the ISFMP Policy Board on the Commission's progress toward achieving this goal. The purpose of this document is to outline the Habitat Program structure and function and to promote understanding of Program processes.

2.0 ASMFC BOARDS AND COMMITTEES INVOLVED WITH HABITAT

This section contains a brief outline of the structure, composition, and function of the Habitat Committee. The organizational chart depicts the committees that most frequently interact with the Habitat Committee, or which also can be tasked by the ISFMP Policy Board to address habitat issues and carry out habitat-related goals of the Commission's Strategic Plan. These committees include the Management and Science Committee (MSC), Management Board / Section, Artificial Reef, and Habitat Committees with input from and the working groups, technical committees (TC's), planning and development teams (PDT's), and advisory panels (AP's). While these committees and their supporting entities are not required to report directly to the Habitat Committee for approval of their work or products, the Habitat Committee should exchange frequent updates with each of these groups. The *Committee Guidance and Assessment Process* and the Interstate Fisheries Management Program Charter contain complete lists of additional committees and their descriptions.



2.1 Habitat Committee

The Habitat Committee advises the ISFMP Policy Board with the goal of identifying, enhancing and cooperatively managing vital fish habitats for conservation, restoration, and protection, and supporting the cooperative management of ASMFC and jointly- managed species. Further, the Habitat Committee reviews, researches, and develops appropriate responses to concerns of inadequate, damaged, or insufficient habitat for Atlantic coastal species of concern to the Commission (ISFMP Charter, 2009). The Habitat Committee's responsibilities are to:

- Advise the ISFMP Policy Board on the conservation, restoration, and protection of vital fish habitat for ASMFC managed species.
- Prepare habitat related documents, position papers, and resolutions regarding proposed projects or general habitat altering activities that affect ASMFC managed species.
- Prepare, review and update, as needed, the habitat sections of all ASMFC Fishery Management Plans.
- Educate ASMFC Commissioners, stakeholders, and the general public about the importance of protecting, restoring, and enhancing habitat to achieve successful fisheries management goals.

The Habitat Committee is a standing Commission committee appointed at the discretion of the Commission Chair. Membership includes state representatives, representatives of several federal agencies and non-governmental organizations (NGO). Membership details are provided in section 4.1. The Habitat Committee reports directly to the ISFMP Policy Board.

2.1.1 Habitat Work Groups

The Habitat Committee can create work groups to address various tasks outlined in the Annual Action Plan. Generally, Habitat Work Groups consist of Habitat Committee members, but outside experts can also be appointed for specific tasks. Most commonly, these work groups address updates to habitat sections in an FMP. When developing a habitat section, Technical Committee members are also invited to participate. A work group may also be created to develop an issue of *Habitat Hotline Atlantic*, a new installment in the Habitat Management Series, or another task or issue identified in the Annual Action Plan, but work group functions are not limited exclusively to these tasks. Each work group is given clear direction on the expected deliverable, as well as a timeframe for completion.

2.2 Artificial Reefs Committee

The Artificial Reefs Committee is a standing Commission committee appointed at the discretion of the Commission Chair. The Committee advises the ISFMP Policy Board with the goal of enhancing marine habitat for fish and invertebrate species through the appropriate use of man-made materials. The Committee is comprised of the state artificial reef coordinators, representatives from the National Marine Fisheries Service, and the U.S. Fish and Wildlife Service. The Artificial Reefs Committee works in close coordination with Habitat Committee, collaborating on relevant topics, reporting to one another on current efforts, but the Artificial Reefs Committee reports directly to the ISFMP Policy Board.

2.3 Management and Science Committee

The MSC provides advice concerning fisheries management and the science of coastal marine fisheries to the ISFMP Policy Board. MSC's major duties are to provide oversight to the Commission's Stock

Assessment Peer Review Process, review and provide advice on species-specific issues upon request of the ISFMP Policy Board, evaluate and provide guidance to fisheries managers on multispecies and ecosystem issues, and evaluate and provide advice on cross-species issues (e.g., tagging, invasive species and exotics, fish health and protected species issues). The MSC also assists in advising the Policy Board regarding stock assessment priorities and timelines in relation to current workloads. The MSC is comprised of one representative from each member state/jurisdiction, the NOAA Fisheries Northeast and Southeast Regions, and the U.S. Fish and Wildlife Service (USFWS) Regions 4 and 5 who possess scientific as well as management and administrative expertise.

2.3.1 Fish Passage Work Group

In 2009, the ISFMP Policy Board established the Fish Passage Working Group to address a number of tasks that were developed during the Commission workshop entitled, "Fish Passage Issues Impacting the Atlantic Coast States." This Work Group consists of fish passage experts from state agencies, federal agencies, and non-governmental organizations working to improve passage of diadromous species managed by the Commission. The Fish Passage Working Group convenes as needed to discuss developments in fish passage and promote critical thinking to mitigate the negative effects of barriers to fish passage on diadromous species. The Fish Passage Working Group reports to the Management & Science Committee, and provide frequent updates to the Habitat Committee.

2.4 Management Boards / Sections

Management boards are established by and advise the ISFMP Policy Board. Each board/section is comprised of the states/jurisdictions with a declared interest in the fishery covered by that board/section. The boards/sections consider and approve the development and implementation of FMPs, including the integration of scientific information and proposed management measures. In this process, the boards/sections primarily rely on input from two main sources – species technical committees and advisory panels. Boards/sections are responsible for tasking plan development teams (PDTs), plan review teams (PRTs), technical committees (TCs), advisory panels (APs) and stock assessment subcommittees (SAS). Each management board/section shall select its own chair and vice-chair. Chairmanship will rotate among the voting members every two years.

2.4.1 Technical Committees

Management boards/sections may appoint TCs to address specific technical or scientific needs requested periodically by the respective board/section, Plan Development Team (PDT, see below for description of this group), Plan Review Team (PRT[1]), or the Management and Science Committee (MSC[2]). A TC may be comprised of representatives from the states, federal fisheries agencies, regional fishery management councils, Commission, academia, or other specialized personnel with scientific and technical expertise and knowledge of the fishery or issues pertaining to the fishery being managed. The Habitat Committee works with the Technical Committees in the development of species-specific habitat sections of FMP's, and seeks their input on reports or issues that may influence a particular species.

[1] The PRT is responsible for providing advice concerning the implementation, review, monitoring and enforcement of FMPs that have been adopted by the Commission.

[2] The MSC provides advice concerning fisheries management and the science of coastal marine fisheries to the ISFMP Policy Board

2.4.2 Plan Development Team

PDTs are appointed by boards/sections to draft FMPs. They are comprised of personnel from state and federal agencies who have scientific and management ability, knowledge of a species and its habitat, and an interest in the management of species under the jurisdiction of the relevant board. Personnel from regional fishery management councils, academicians, and others as appropriate may be included on a PDT. The size of the PDT shall be based on specific need for expertise but should generally be kept to a maximum of six persons. The Habitat Committee coordinates their efforts to update habitat information in an FMP with that of a PDT's to develop an FMP, amendment or addendum.

2.4.3 Advisory Panels

Advisory Panel (AP) members include stakeholders from a wide range of interests including the commercial, charter boat, and recreational fishing industries, conservation interests, as well as non-traditional stakeholders. Members are appointed by the three Commissioners from each state with a declared interest in a species because of their particular expertise within a given fishery. APs provide guidance about the fisheries that catch or land a particular species. The AP's role is to provide input throughout the entire fishery management process from plan initiation through development and into implementation. APs have provided some very key information on habitats used by ASMFC species, and/or their interaction with other species.

2.5 Atlantic Coastal Fish Habitat Partnership

The Atlantic Coastal Fish Habitat Partnership (ACFHP) is a coast-wide collaborative effort to accelerate the conservation of habitat for native Atlantic coastal, estuarine-dependent, and diadromous fishes. The Partnership consists of resource managers, scientists and professionals representing 30 different states, federal, tribal, non-governmental and other entities. ACFHP works in areas stretching from Maine to the Florida Keys, and from the headwaters of coastally draining rivers to the edge of the continental shelf, with a focus in estuarine environments.

ACFHP is a recognized Fish Habitat Partnership (FHP) of the National Fish Habitat Action Plan (NFHAP), and is a separate entity from the Commission. However, ACFHP does receive administrative support from the Commission. Habitat Committee members may serve as steering committee members or organization representatives for ACFHP. ACFHP works in a parallel, complementary function with the Habitat Committee throughout the Commission member states to complete aquatic habitat conservation projects, including on the ground restoration projects. ACFHP coordinates closely with two adjacent and partially overlapping FHPs, the Southeast Aquatic Resources Partnership (SARP) and the Eastern Brook Trout Joint Venture (EBTJV). Collaboration and clear communication between ACFHP, adjacent NFHP's, and the Habitat Committee is beneficial to Commission habitat conservation goals associated with managed species.

ACFHP's primary goals are to:

- Prioritize fish habitat conservation needs among stakeholders.
- Support on the ground habitat conservation projects by securing and leveraging funding.
- Develop coast-wide scientific assessments and projects, whose outcomes provide decision support tools for partners and other interested stakeholders.
- Facilitate stakeholder access to tools and guidance for on-the-ground conservation and prioritization.

2.6 Coordination with Other Committees/Groups

Bi-annual updates are exchanged with the Commission's MSC. The Habitat Coordinator works with the MSC Coordinator to ensure that important, relevant news is exchanged between the two committees. There are additional work groups for which the Habitat Committee either receives updates or enlists the participation of Habitat Committee member(s) (e.g. ASMFC Ecosystem Based Fishery Management Work Group). Information and updates are regularly exchanged between the Habitat Committee and Artificial Reef Committee, as well as the Habitat Committee and Fish Passage Work Group.

Species Boards/Sections may consider referring broader habitat issues to the Habitat Committee. Boards/sections will develop specific and clear guidance whenever tasking committees for advice. ISFMP staff, in consultation with the board/section Chair and technical support group Chair, will develop the written charge. The charge will contain terms of reference to clearly detail all specific tasks, the deliverables expected, and a timeline for presentation of recommendations to the board/section. It is the responsibility of the ISFMP staff and any technical support group Chair present at board/section meetings to ensure the timeline can be met. Any problems or discrepancies encountered by the technical support group in meeting the charge will be discussed with the appropriate ISFMP staff and board/section Chair.

3.0 PROGRAM DOCUMENTATION

3.1 Annual Action Plan

The Commission's Annual Action Plan details the activities and tasks to be accomplished and budgeted for the year. Most of the Habitat Program's responsibilities are outlined in Goal #4, Protect, restore, and enhance fish habitat and ecosystem health through partnerships, policy development and education," but additional tasks may also be found under other goals within the Action Plan. Goal #4 includes all habitat-related tasks covered by the Commission's budget and may be assigned to Habitat Committee, Artificial Reef Committee, or ACFHP. Each year, the Habitat Coordinator will work with the Habitat Committee Chair and the ISFMP Director to update the Habitat Committee strategies in the ASFMC Action Plan. The Habitat Committee will have an opportunity to review and approve the Habitat Program's activities and planned schedule prior to submission. Annual budget planning will take place as part of this action planning process. The Coordinator will work separately with the Artificial Reef Committee to develop and approve the tasks assigned to Artificial Reef Committee. The ACFHP coordinator will facilitate the process for those tasks assigned to the Partnership.

3.2 Habitat Committee Annual Work Plan

To best align the Habitat Committee's efforts and time with that of the Commission's goals and objectives, the Habitat Coordinator and Habitat Committee Chair, in consultation with the ISFMP Director, will prioritize the Annual Action Plan tasks that pertain to the Habitat Committee. The work plan will clarify the task, identify who is responsible for accomplishing the tasks (e.g. Coordinator, a potential contractor, committee member, working group or Committee as a whole), the process, and timeline to complete the task.

3.3 Habitat Committee Annual Effectiveness Review

At the spring Habitat Committee meeting each year, an annual review of the effectiveness of the Habitat Program should be conducted. This review should be completed by September to allow time to incorporate changes into the Commission Annual Action Plan for the following year that is approved at the Commission annual meeting week. The review should proceed as follows:

1. Tasks completed by the Committee should be reviewed and compared to the Commission Annual Action Plan.
2. Accomplishments (regardless of inclusion in the Action Plan) should be noted.
3. Deficiencies should be realized and a plan to address them should be discussed.
4. Activities should also be evaluated in the context of the Commission's Five-Year Strategic Plan.
5. In light of this review, suggestions should be made for changes to the Annual Action Plan for the coming year.
6. Commissioners will complete a similar review of the Habitat Program once every five years, in conjunction with the revision of the Commission's Strategic Plan.

4.0 COMMITTEE EXPECTATIONS

The Habitat Committee, under the direction of the ISFMP Policy Board, is a standing ASMFC Committee that conducts the activities of the Habitat Program, with the assistance of the Habitat Coordinator. Committee members should expect to attend ~2 meetings each year. The Habitat Committee operates under the principle of consensus agreement.

Even though all Committee members have been appointed by a specific agency, it is not appropriate for members to represent the policies and/or politics of that agency. It is the responsibility of each committee member to use the best scientific information available and established techniques consistent with the current state of scientific knowledge. Although each Committee member will have a different background, the Committee as a whole is expected to work in support of the Commission's broader goals, mission, and vision. The individuals on the Committee represent the expertise of their agency or organization and should offer opinions that focus on best available science when considering Commission habitat issues, which at times may differ from their own agencies or organizations. All participants in the Commission process should act professionally and expect to be treated with respect. See Section 5.6 on meeting etiquette.

4.1 Committee Membership

Each member state of the Commission shall be allowed (and encouraged to present) one nomination to the Habitat Committee for the Commission Chair's consideration. Nominations shall not include current ASMFC Commissioners. However, all ASMFC Commissioners are welcome and encouraged to attend any Habitat Committee function at their discretion.

The U.S. Fish and Wildlife Service and National Oceanographic and Atmospheric Administration Fisheries Service (NOAA Fisheries) each have two nominations (one from each geographic region within the Commission's jurisdiction) to the Habitat Committee for the Commission Chair's consideration. The following federal agencies are each provided one nomination to the Habitat Committee for the Commission Chair's consideration: National Ocean Service, Environmental Protection Agency, U.S. Geological Survey, and the Army Corps of Engineers. Additional agencies

may be added at the discretion of the Commission Chair in consultation with the Executive Director of the Commission.

Two seats shall be available on the Habitat Committee for members from non-governmental organizations (NGO). Upon the resignation of an NGO member, the NGO seat shall become available to the NGO selection process described in Section 4.3. NGO seats shall not automatically turn over to another member of the previous member's organization.

The ISFMP Policy Board shall evaluate changes to the overall structure of membership on the Habitat Committee.

All Habitat Committee members should be able to demonstrate a strong knowledge of general fish habitat for Commission managed species, a familiarity with current Atlantic estuarine and marine habitat issues, and understanding for the habitat management process within a state or Federal waters. Committee members also must be willing to dedicate a reasonable amount of time to the activities of the program, including meetings, conference calls, workshops, document review, and work group functions.

It is also important that each committee member provide periodic briefings to his/ her agency's Administrative Commissioner on the discussions and actions taken at all Habitat Committee meetings. **These briefings should be done after every Habitat Committee meeting at a minimum.**

4.2 Participation Review Process

It is important that all members of a Commission committee fully participate in all meetings and activities of the committee. In the event that it comes to the attention of the Habitat Coordinator, or the Habitat Committee, that any individual Committee member is non-participatory in activities and meetings for the period of at least one year, a participation review may take place. The appropriate Administrative Commissioner should be informed if a committee member is unable to commit to the level of participation required.

If a NGO member is found to be non-participatory, a consultation will be made with the relevant organization. If the NGO member is not able to increase participation, the NGO seat shall become available to the NGO selection process described in Section 4.3.

Habitat Committee members are encouraged to send meeting-specific proxies to meetings that they are unable to attend. Commission staff should be contacted by the committee member prior to the start of the meeting if he or she is unable to attend. The committee member, with appropriate approval from the agency supervisory staff if necessary, should provide staff with the name of his/her proxy for that committee meeting in writing (email or letter). Proxies must be from the same state or jurisdiction or agency/organization as the individual making the designation. Proxies shall abide by the rules of the committee. Advance notification of proxy names must be submitted to the Habitat Coordinator prior to the meeting to ensure proper distribution of meeting materials and inclusion on the travel authorization.

4.3 NGO Selection Process

The selection process for NGO representatives to the Habitat Committee will be similar to the process for the selection of non-traditional stakeholders to Commission Advisory Panels. In the event that a NGO seat is vacated on the Habitat Committee (through non-participation, resignation, or the Commission Chair's evaluation), a "Call for Nominations" will be distributed to the public.

The NGO seat will be open to any organization, regardless of type (i.e., environmental, academic, industry, etc.). Interested organizations will be required to submit a nomination form (posted on the Commission's website or obtained from the Habitat Coordinator) identifying the nominated individual's qualifications, and present a letter of support to the Commission. Nominees should be able to demonstrate a strong knowledge of general fish habitat, a familiarity with current Atlantic habitat issues, and be an effective advocate for fish habitat. Nominees also must be willing to dedicate a reasonable amount of time to the activities of the program, including meetings, conference calls, workshops, document review, and working groups.

Demonstration of the ability to increase the credibility and expertise of the Habitat Program so that it will become a recognized authority on Atlantic coastal habitat issues will be a key element of the evaluation of nominations. The Habitat Committee will have the opportunity to review nominations and make a recommendation to the Commission Chair for the appointment of the vacant NGO seat. Ultimately, the selection of new NGO representatives will be at the discretion of the Commission Chair.

4.4 Chairmanship

Unless otherwise specified, all Commission committees and subcommittees will elect their own Chair and Vice Chair. Chairs serve two-year terms and chairmanship should rotate among members of the committee. The role of the Chair is demanding and only those willing and able to commit the time and energy required by the job should agree to serve. The Chair must be willing to perform the job and state/federal agencies/NGOs must be willing to provide the Chair time to attend to Commission business. At the end of a sitting Chair's term, the Vice Chair will become the Chair, and nominations for a new Vice-Chair will be solicited from the Habitat Committee. The Vice Chair will serve in this capacity for a 2-year term under the acting Chair. It is the responsibility of all officers to facilitate meetings in an objective manner and represent the viewpoints of all committee members, including opposing opinions and opinions in opposition to their own. In the event that circumstances require a Chair to resign their position during their term, the Vice-Chair shall replace the Chair, and have the option of serving the remainder of the previous Chair's appointment in addition to their own anticipated two-year term. For Chair and Vice Chair meeting responsibilities, please see Section 6.3.

4.5 ASMFC Staff Responsibilities

The Habitat Coordinator is responsible for organizing all Habitat Committee activities. The Habitat Coordinator will also serve as a liaison on species-specific issues between the ISFMP Policy Board, Management Boards/Sections, Technical Committees, Advisory Panels, Artificial Reefs Committee, Law Enforcement Committee, and Management & Science Committee. The Coordinator, in consultation with the Chair and Vice-Chair, is responsible for scheduling committee meetings, drafting agendas, and distributing meeting materials. The Habitat Coordinator works with the Habitat Committee, Habitat Committee Chair, and ISFMP Director to identify, prioritize, and carry out program activities as are outlined in the Commission's Annual Action Plan.

The Habitat Coordinator, in consultation with the Chair, will assist in prioritizing tasks assigned to the Habitat Committee and its work groups. Staff should track committee meeting attendance and provide records upon request. The Habitat Coordinator and the Chair should assist in clarifying the details of any tasks assigned to the Habitat Committee by the ISFMP Policy Board. Assistance should also be provided in the development of the written charge, including all specific tasks, expected deliverables, and a timeline for presentation of recommendations to the Board.

The Habitat Coordinator and a Habitat Committee work group are responsible for producing the newsletter, the *Habitat Hotline Atlantic*.

5.0 MEETING POLICIES AND PROCEDURES

For the purpose of this section, a meeting can be attended by Habitat Committee members in-person, through a conference call, or via webinar unless specified otherwise in a specific format.

5.1 Meetings announcements

A public notice, via the Commission website (www.asmfc.org), will be provided at least two weeks prior to all in-person meetings of the Commission and its various committees, and at least 48 hours notice will be provided for any meetings held by conference call; provided exceptions to these notice requirements may be granted by the Commission Chair. A non-committee member can request, through Commission staff, to be notified of committee meetings via email (*Note: the public notice of the Commission website is the official notification of a scheduled meeting*.). Non-committee members may attend any in-person or conference call committee meeting, unless confidential data are being discussed.

If a non-committee member would like to attend a webinar, he/she should contact the Habitat Coordinator or other appropriate Commission staff 24 hours prior to the webinar in order for staff to determine if space is available. If Commission staff is not contacted, priority for available webinar space will be given to committee members.

5.2 Materials Distribution

Meeting materials will be distributed to committee members prior to committee meetings via email or FTP site, if necessary. Agendas and documents for public review will be available via the Commission website. Draft materials with preliminary content and/or with confidential data will not be distributed outside of the committee. The Chair will explain at the outset of meetings that all data and analyses are preliminary and not to be shared until they have been finalized and distributed to the appropriate board/section.

5.3 Roles of Chair and Vice-Chair at Meetings

It is the responsibility of the Chair to conduct and facilitate meetings. The Chair will lead committees through agenda items in consultation with staff, including items requiring specific action. The Chair is responsible for working with the Habitat Coordinator to ensure that the activities identified in the Commission Annual Action Plan are completed. The Chair should assist in clarifying the details of any tasks assigned to the Habitat Committee. Assistance should also be provided in the development of the written charge, including all specific tasks, expected deliverables, and a timeline for presentation

of results and/or recommendations to the Board. The Chair should attend all Board meetings and should be in frequent contact with the appropriate ISFMP staff. It is also the responsibility of the Chair of the technical support group to provide presentations to the relevant oversight committee on all findings and advice. All formal presentations should be conducted in a manner consistent with the guidance provided in Subsection 6.4.5.

The Habitat Committee Chair is also responsible for clarifying the majority and/or minority opinions, where possible. **The overall goal of all technical support groups is to develop recommendations through consensus. The committee should not vote on issues, but should develop a majority and minority opinions for presentation to the board. It should be noted that minority opinions should be used only as a last resort when full consensus cannot be reached.** The Commission will periodically conduct meetings management and consensus-building seminars for all Chairs and Vice-Chairs of technical support groups, and others as appropriate. Chairs and Vice-Chairs should attend these seminars in order to improve your their ability to conduct efficient meetings, objectively facilitate discussions and development of consensus recommendations, and objectively represent opposing viewpoints.

The Vice Chair will act as Chair when the Chair is unable to attend a meeting or conference call. It is the role of the Vice Chair of committees to take meeting minutes that will be used to develop meeting summaries and committee reports. A member of the committee will be appointed by the Vice Chair to take minutes when the Vice-Chair is acting as Chair.

5.4 Meeting Records

Meeting summaries are provided for all Commission committee meetings (a committee report or meeting minutes can serve as the meeting summary). If the Vice-Chair is unable to take minutes or there is no Vice-Chair, another committee member will be appointed to take minutes. Meeting summaries will be distributed by ISFMP staff to all committee members for review and modification. Meeting summaries should be finalized and approved by the Habitat Committee no later than 60 days following the meeting. Draft meeting summaries will only be distributed to Habitat Committee members for review. The Chair should ensure that all Habitat Committee member comments are addressed prior to approval and public distribution of meeting summaries and committee reports.

Commission staff should ensure that meeting summaries of all Commission technical support groups are distributed to other appropriate support groups, including APs, TCs, Law Enforcement Committee (LEC[3]), and MSC. All board/section meeting summaries, and appropriate documentation, should also be provided to technical support groups. Upon approval, these documents will also be posted to the Commission website.

5.5 Public Participation at Meetings

Public comment or questions at committee meetings may be taken at designated periods at the discretion of the Habitat Committee Chair. In order for the committee to complete its agenda, the Chair, taking into account the number of speakers and available time, may limit the number of comments or the time allowed for public comment. The Chair may choose to allow public comment

[3] The LEC provides information on law enforcement issues, brings resolutions addressing enforcement concerns before the Commission, coordinates enforcement efforts among states, exchanges data, identifies potential enforcement problems, and monitors enforcement of measures incorporated into the various FMPs.

only at the end of the meeting after the Habitat Committee has addressed all its agenda items and tasks. Where constrained by the available time, the Chair may limit public comment in a reasonable manner by: (1) requesting individuals avoid duplication of prior comments/questions; (2) requiring persons with similar comments to select a spokesperson; and/or (3) setting a time limit on individual comments. The Commission's public participation policy is intended to fairly balance input from various stakeholders and interest groups. Members of the public are expected to respectful of guidelines outlined in section 6.6, meeting etiquette.

Members of the public may be invited to give presentations at committee meetings if the board/section has tasked the committee with reviewing their materials, or if members of the public have been invited in advance by the Habitat Committee Chair to respond to a request from the Habitat Committee for more information on a topic. Invitations will be offered in advance of the meeting. Public presentations will not be allowed without these invitations. See Section 8 for additional details regarding public participation in stock assessment data, assessment, and peer review workshops.

5.5.1 General Submission of Materials

Public submissions of materials for Habitat Committee review outside of the benchmark assessment process must be done through the board/section Chair (see Section 4.0). The Chair will prioritize the review of submitted materials in relation to the existing task list. Materials provided by the public should be submitted to the Chair at least one month in advance of the meeting. A committee is not required to review or provide advice to the board/section on materials provided by the public unless it is specifically tasked to do so by the Chair in writing or from the board/section. Materials will be distributed to the Habitat Committee by Commission staff.

5.6 Meeting etiquette

It is the role of the Chair to ensure participants (committee members and members of the public) are respectful of the following meeting guidelines. The Chair should stop a meeting if a participant is not following these guidelines, and direct them as to the appropriate way to continue. Commission staff should note when these guidelines are not being followed if the Chair does not do so. If a participant is being disruptive, the Chair may ask the individual to leave the meeting.

- **Come prepared.** Read the past meeting summary prior to the meeting. Bring something on and with which to write. All presenters should ensure their handouts, presentations, etc., are organized and complete, and that appropriate arrangements have been made with the Habitat Coordinator for needed media support and material distribution.

- **Be respectful of others.** Hold your comments until the Chair asks for comments, unless open discourse throughout the meeting is encouraged. Do not interrupt other attendees. Wait to speak until the Chair recognizes you. Avoid holding side-bar discussions with others until a meeting break or after the meeting is adjourned. Side conversations are disruptive to other participants and inconsiderate of the group.

- **Mute electronics.** Turn all cell phones on vibrate or turn them off completely. Do not answer your phone while in the meeting, and step out of the room to take emergency calls.

- **Attend the entire meeting.** Make travel arrangements to allow participation in the entire meeting. Early departure by committee members disrupts the meeting and impacts the development of consensus recommendations and decisions.

If complaints arise, they can be brought to the attention of the Chair of the committee, Commission staff, or the Commission's Executive Director.

6.0 COMMUNICATIONS POLICIES AND GUIDELINES

6.1 Email Policies

For the purposes of distributing draft committee documents, distribution will be limited to committee members. Non-committee members may request to receive notices of committee meetings, agendas, approved meeting summaries and final committee reports.

6.2 Recordings

Committee meetings are open for the public to attend and as such may be recorded (audio or video) by any participant (public or committee member) with notification to the Chair and staff prior to the start of the meeting, and so long as those recordings are not disruptive to the meeting. The Chair and/or staff will notify committee members prior to the start of the meeting that they will be recorded. Staff may record meetings for note taking purposes, but the official meeting record is the meeting summary or committee report. Staff recordings will not be distributed.

6.3 Webinars

While committee members are encouraged to attend all technical meetings in person, the Commission acknowledges occasional travel constraints or other impediments to attendance in person. If a committee member cannot attend a technical meeting in person, that member may request that a webinar be arranged to accommodate them. However, the Commission cannot guarantee that the audio or visual quality of the webinar will be sufficient to allow remote complete participation in the meeting by committee members. Committee members should contact Commission staff at least twenty-four hours in advance if they require a webinar, and those requests may be accommodated as feasible.

If a committee meeting is held via webinar (i.e., there is no in-person meeting), it shall be open to the public. As with in-person meetings, public comment or questions at committee webinars may be taken at designated periods at the discretion of the committee Chair (see Section 6.5 for more detailed guidance on public participation in committee meetings). Certain agenda items may not be open to the public; these include discussion of confidential data and preliminary model results. Non-committee members will be asked to leave before confidential issues are discussed. To ensure that enough bandwidth is reserved for the meeting, members of the public who wish to attend the webinar must contact staff 24 hours prior to the webinar to ensure there is available space.

Commission policy on meeting etiquette (Section 6.6) applies to webinars as well as in-person meetings. In addition, participants are asked to mute their phone lines when not speaking to reduce background noise that may disrupt the call.

Quarterly Commission Board Meetings are broadcast via webinar and information regarding listening to those meetings will be available via the Commission's website.

6.4 Reports

All reports developed by any Commission committee should include, at a minimum, the following components (1) the specific charge to the committee, (2) the process used by the committee to develop recommendations and/or advice, (3) a summary of all committee discussions, and (4) committee recommendations and all minority opinions. All committee reports are a consensus product of the committee, not an individual member[4].

6.4.1 Non-Committee Member Reports: Outside of the benchmark stock assessment process, a non-committee member may submit reports for committee review through the board/section Chair (see Section 6.5.1). The board/section Chair will determine if the report should be reviewed by the appropriate committee and specify tasks to be completed in the review. Non-committee reports will follow the same formatting guidelines and distribution procedures as Commission committee reports.

6.4.2 Distribution of Committee Reports: Draft committee reports will only be distributed to committee members. All committee member comments should be addressed prior to approval and distribution of committee reports. Stock assessment and peer review reports will not be distributed publicly until the board/section receives and approves the reports for management use. Results of a stock assessment may not be cited or distributed beyond the committee before the assessment has gone through peer review and been provided to the board/section. Commission staff will distribute reports to the appropriate boards/sections and post committee reports on the website following board approval.

6*7.4.3 Corrections to Reports*: Corrections to published stock assessment reports can be made on rare occasions when mistakes are found after board/section approval. All corrections will be highlighted in yellow within the report. A new publication date will be added below the original publication date on the cover of the report, e.g., *Corrected on March 29, 2012.* An explanation of the correction will be included in the introduction or executive summary and highlighted.

6.4.4 Presentations: Chairs and committee members will be responsible for presenting technical reports to boards/sections, APs, and other committees who may have a limited technical background. It is important to effectively present technical information to fishery managers and stakeholders in a straightforward and understandable manner.

All presentations should be developed using a Power Point template provided by Commission staff. Staff can assist in the development of presentations. A copy of the presentation should be provided to staff prior to the meeting. Presentations should be developed consistent with guidelines for other professional presentations, such as the American Fisheries Society. Some general guidelines include:

- Keep visuals simple, limit one idea per slide.
- Prepare figures and tables specifically for your presentation. Copies from manuscripts or papers usually contain too much detail for a presentation.
- When working with words, think brevity. Use a maximum of 6 words per line with 5 or 6 lines per slide. Use key phrases to emphasize important points.
- Tables should be simple with a maximum of 3 columns and 5 rows or vice versa.

[4] However, a committee report can acknowledge an individual member, or members, has/have been largely responsible for production of a document/report.

- Graph/table values should be in a large enough font to be clearly viewed.
- Visuals appear confusing when too many colors are used; limit to 2 to 4 contrasting colors.

7.0 FMP HABITAT SECTIONS

7.1 Guidance on the development of habitat sections of FMPs

For species under the sole jurisdiction of the Atlantic States Marine Fisheries Commission (Commission) or managed complimentarily to federal FMPs, this document will serve as the primary guide for preparation of the habitat portion of the FMP. For species managed jointly by the Councils and the Commission, or by the Commission and NOAA Fisheries (e.g. coastal sharks), the NOAA Fisheries guidance and regulations, pursuant to current federal fishery management legislation, must be used as well. The complete ISFMP FMP outline can be found in Appendix 1.

The Commission has chosen to adopt Essential Fish Habitat (EFH) designations prepared by the Regional Fishery Management Councils (Councils) for any species managed jointly or in association with the Councils: such as bluefish, scup, summer flounder, Atlantic herring, spiny dogfish, coastal sharks, and black sea bass. For species solely under Commission management, the Commission has chosen to identify all habitat and Habitat Areas of Particular Concern but will refrain from the identification of EFH. ***When an HAPC is described for a species solely under the management of the Commission, the designation does not have any regulatory authority. Please refer to the ASMFC HAPC document for a list of species under Commission management only and description of the corresponding HAPC (ASMFC 2013b).***

The five basic sections of the habitat component required for Commission FMPs include:

1. Description of the habitat
2. Identification and distribution of habitat and HAPCs
3. Present condition of habitats and HAPCs
4. Recommendations and/or requirements for fish habitat conservation/restoration
5. Information needs/recommendations for future habitat research

A Commission FMP may also include habitat-relevant information on:

- Ecosystem considerations
- Habitat monitoring programs
- Habitat conservation and restoration management program implementation, including:
- Preservation of existing habitat
- Habitat restoration, improvement, and enhancement
- Avoidance of incompatible activities
- Fisheries practices
- Mandatory habitat compliance requirements for states
- Artificial reef development/management

Background synthesis information can be included in a FMP Background Document. Habitat information appropriate for the background document may be included in the FMP Background Document, or published as a separate habitat source document. In this guidance, all habitat

information used for FMP development will be referred to as information for "habitat section" preparation, rather than designated for inclusion in either FMPs or background documents. For an overview of the habitat sections of an FMP, please refer to Appendix 2. For complete description and guidance on the content of the habitat section and its parts, please refer to Appendix 3.

The best available science-based information and data should be used in development of the habitat sections. Statements should be supported by citations, which are listed in a "literature cited" section. Peer-reviewed literature, gray literature (state or federal technical reports, Doctoral dissertations, or Masters theses), and personal communication with knowledgeable professionals should be sought, utilized, and cited in the document. This includes, but is not limited to, that body of biological, environmental, and ecological data concerning habitats and their function and value, provided that the methods of collecting such information are clearly described and are generally accepted as scientifically valid. Data may come from state, federal, or private databases. If original unpublished information from the author is available, then this information should be included, with any necessary explanation about the materials and methods that were applied.

In many cases, such as the determination of how much habitat is necessary to support a given population size, there will likely be insufficient information upon which to draw conclusions. This should be clearly stated, in order to show that the information was sought but unavailable, and to identify the issue as a research need.

7.2 Process for development of habitat sections of FMPs

1. Development, or revision, of a habitat FMP section will be initiated by notification from the appropriate FMP Coordinator to the Habitat Coordinator. Alternatively, the Habitat Committee may submit a request to a species board to initiate development of a FMP addendum to deal with an important habitat issue that the Committee feels should be addressed for a species that is inadequately (as determined by the Habitat Committee) covered in previous plans and amendments.

2. The Habitat Coordinator works with the Habitat Committee, or work group, to identify authors for the habitat section and create timelines for review and completion.

    a. The Habitat Committee may create ad hoc species-specific work groups to develop habitat sections of FMPs. Such a work group may consist of Habitat Committee members and Technical Committee members. In addition to the work group and if funds are available, the Commission may initiate a contract for the development of a habitat section. The work group would provide oversight of contractor's work.

3. The Habitat Coordinator is responsible for ensuring the section is compliant with all Commission's requirements, and must coordinate with the FMP coordinator. Additional writers identified by the Habitat Committee can provide additional information to ensure scientific accuracy.

4. The Habitat Committee working group (when applicable) will review and approve the draft habitat section for the FMP. The draft will then be sent to the Habitat Committee for final review and approval.

5. The draft is then sent to the appropriate Technical Committee for review and approval.

6. The appropriate Management Board or Section reviews the draft and provides ISFMP staff with direction to develop an addendum for the new or revised FMP.

7. The designated Management Board or Section reviews the draft addendum and approves it for public comment.

8. The specified Management Board or Section reviews the draft addendum and public comment and considers final approval of the document.

8.0 HABITAT SOURCE DOCUMENTS

8.1 Process for development of source documents

1. Upon approval by the ISFMP Policy Board, the Habitat Committee can initiate the development of a habitat source document on topics of immediate and broad interest to ASMFC Commissioners that will provide needed information to the states, and advance the Commission toward achieving its vision. For a full list of topics already addressed, please visit http://www.asmfc.org/educationOutreach.htm.
2. Development and timing will be planned by the Habitat Coordinator with final approval of the ISFMP Director to ensure that staff and funds are available to complete the proposed documents in a timely manner.
3. Before time and effort are put into any source document, an evaluation of the usefulness of the document and goal/objective/program compliance must be conducted. In this evaluation process, the Habitat Committee must consider the following components:
   a) Clearly define the purpose of the document. Be sure the focus and expectations are well articulated.
   b) Be sure that the objectives of the document adhere to and advance the mission of the habitat program and the Commission as a whole.
   c) Develop an outline of the entire document in as much detail as possible before contractors are hired or a work group appointed to complete the work.
   d) Set a realistic, detailed timeline for completion of the document.
4. The Habitat Coordinator may request an informal editorial review of the document (or sections therein) from the Habitat Committee before it is completed.

8.2 Process for source document approval

1. Once a document is determined by the Habitat Coordinator to be complete, it will be presented to the Habitat Committee for formal review and approval. No documents will be formally approved until they are complete.
2. Following approval by the Habitat Committee, the document will be forwarded to the ISFMP Policy Board for final approval.

8.3 Process for selection and evaluation of authors/contractors

1. Following Habitat Committee completion of a detailed outline for the given source document, a "Request for Proposals" shall be distributed that clearly outlines the direction of the document. Proposals shall be submitted to the Habitat Committee for consideration.

2. The Habitat Committee shall carefully and critically review all submissions, and select the appropriate author(s). If no (or very few) submissions are made, the ISFMP Director and Habitat Coordinator shall work with the Habitat Committee to locate an appropriate author.
3. Authors shall be made aware of, and agree to, the expected timeline for completion and content of the document.
4. Authors shall use the current American Fisheries Society Style Guide for document formatting and citations.
5. Contractors shall not receive final payment until the document is ready for publication.
6. The Commission reserves the right to request revisions of the document until it is completed to the satisfaction of the Habitat Committee, ISFMP Policy Board, and Commission staff.

9.0 HABITAT-RELATED POLICY STATEMENTS AND RESOLUTIONS

The Commission may use policy statements and resolutions to take a position on an issue that may hinder the restoration or stock status of Commission-managed species in multiple jurisdictions. Unlike the project or permit commenting process discussed below, a policy statement or resolution is not specific to one project or one location, rather it refers to a broader scale issue that may impact a species or several species in several locations (e.g. fish passage or water quality).

9.1 Drafting ASMFC policy and recommendations for action on habitat related issues

1. The Policy Board may direct the Habitat Committee to develop a policy statement to address an issue or the Habitat Committee can initiate the development of policies by Committee action in response to a request from the Policy Board to address an issue.
2. The Habitat Committee works with the Habitat Coordinator to draft the policy and recommendations for action, if any.
3. The Habitat Committee reviews and approves the draft policy before forwarding it to the ISFMP Policy Board for approval.
4. The Habitat Coordinator and the Habitat Committee should continually work to determine the effectiveness of policy statements in accomplishing the policy goal.

9.2 Drafting ASMFC resolutions on habitat related issues

1. The Policy Board may direct the Habitat Committee to develop a policy statement to address an issue or the Habitat Committee can initiate the development of resolutions by Committee action in response to a request from the Policy Board to address an issue.
2. The Habitat Committee works with the Habitat Coordinator to draft the resolution and gather supporting documentation for a position.
3. The Habitat Committee reviews and approves the resolution before forwarding it to the ISFMP Policy Board for approval.

10.0 THE ASMFC PROJECT/PERMIT COMMENT PROTOCOL FOR HABITAT IMPACTS

The Commission may have input on project and permit review that may affect Commission managed fisheries. Other federal and state agencies have the expertise, resources, and responsibility to conduct these reviews. However, in the event that a project may affect Commission-managed migratory

species, it may not only be appropriate, but responsible, to comment on landscape-scale impacts, in accordance with the Commission's unique inter-jurisdictional role.

Any input the Commission provides to permitting agencies will be as a party with an interest in protecting fish, fish habitats, and the fisheries dependent upon them. The Commission will not devote the time and resources to review and comment on permits and projects unless several conditions, outlined below, are met. However, the Commission should still call to the attention of the permitting agencies relevant information that the Commission has gathered in the form of FMPs and Habitat Management Series Reports. In this process, it is the responsibility of the Habitat Committee to evaluate a project based on its technical aspects as it may affect fisheries habitat and/or fish populations, and the responsibility of the ISFMP Policy Board to evaluate a project based on its implications to fishery management.

This process is separated into two distinct events: 1) early involvement by the Habitat Committee in the technical review of developing projects (e.g., scoping process for an EIS), which result in an informational letter that does not provide a Commission position or opinion; or 2) review by the Policy Board (usually later in the permit process), which results in a letter specifying a Commission position or policy or course of action.

10.1 Process for sending an informational letter

1. Project Identification
    a. *Who*: Commissioners, Habitat Committee members, Management and Science Committee members, Advisory Panel members, Technical Committee members, interested stakeholders, and/or Commission staff
    b. *What*: Alert the Habitat Coordinator of a proposed project/permit that potentially impacts Commission-managed species or their supporting habitat.
    c. *When*: As early as possible during the scoping period
2. Notification
    a. *Who*: Policy Board
    b. *What*: Habitat Coordinator issues notification that the Habitat Committee is examining a particular project/permit and implementing the review process.
3. Deliberation
    a. *Who*: Habitat Committee and any interested Commissioners
    b. *What*: Discussion to determine if the project/permit meets the following criteria:
        1. The project may have significant stock-level impacts on Commission-managed species and their supporting habitat.
        2. Staff thinks that Commission involvement has the potential to make an impact on the process.
        3. The project has inter-jurisdictional implications.
        4. The project would establish either a highly desirable, or highly undesirable, precedent from the Commission's perspective.
        5. Commission staff, with the assistance of Habitat Committee members and/or federal and state agency staff, can adequately research and address the proposed project in a reasonable time frame and within the existing budget.

4. Writing and Sending an Informational Letter
    a. *Who*: Whomever proposed that an informational letter be sent, in coordination with the Habitat Coordinator, interested Habitat Committee members, and interested Commissioners
    b. *What*: The Commission has pertinent information regarding impacts of a project on a Commission species or habitat, and the Habitat Committee determines by consensus that the issue is significant enough to warrant an informational letter. Interested parties in coordination with the Habitat Coordinator compose and distribute the letter. An informational letter may include, but is not limited to, information gathered from:
        1. FMPs, including EFH designations for jointly-managed species.
        2. Habitat Management Series Reports.
        3. Commission Policies and Resolutions.
        4. External peer-reviewed literature.

Note: The informational letter does not provide an opinion or position of the Commission, but rather provides information necessary for the permit agency to properly evaluate their action.

10.2 Process for sending a recommended course of action (or comment) letter

1. Project Identification
    a. *Who*: Commissioners, Habitat Committee members, Management and Science Committee members, Advisory Panel members, Technical Committee members, interested stakeholders, and/or Commission staff
    b. *What*: Alert the Habitat Coordinator of a proposed project/permit that potentially impacts our managed species or their supporting habitat; this may be a project/permit for which an informational letter was sent previously from the Habitat Committee, or it may be an entirely new project/permit.
    c. *When*: During the public comment period (as early as possible, especially if no informational letter was previously sent)

2. Notification
    a. *Who*: Policy Board
    b. *What*: Habitat Coordinator issues notification that the Habitat Committee is examining a particular project/permit and implementing the review process.
3. Deliberation Phase 1
    a. *Who*: Habitat Committee and any interested Commissioners
    b. *What*: Discussion to determine if the project/permit meets the following criteria:
        i. The project may have significant stock-level impacts on Commission-managed species and their supporting habitat.
        ii. Staff thinks that Commission involvement has the potential to make an impact on the process.
        iii. The project has inter-jurisdictional implications.
        iv. The project would establish either a highly desirable, or highly undesirable, precedent from the Commission's perspective.
        v. Commission staff, with the assistance of Habitat Committee members and/or federal and state agency staff, can adequately research and address the proposed project in a reasonable time frame and within the existing budget.

4. Deliberation Phase 2
    a. *Who*: Policy Board
    b. *What*: Based on technical aspects, the Habitat Committee recommends to the Policy Board that the Commission issue a letter recommending a course of action for the project/permit. The Policy Board considers the Habitat Committee's recommendation, and deliberates commenting on the project based on its implications to fishery management. The Policy Board makes a decision based on a vote that requires a simple majority of participating and voting members in favor to pass.
5. Writing a Recommended Course of Action Letter
    a. *Who*: Whomever proposed that a recommended course of action letter be sent, in coordination with the Habitat Coordinator, interested Habitat Committee members, and interested Commissioners (plus Advisory Panel or Technical Committee members if needed)
    b. *What*: A recommended course of action letter is developed by interested parties in coordination with Commission staff, and may include, but is not limited to:
        i. Indicating a recommended course of action.
        ii. Indicating the level of concern.
        iii. Presenting a justification for the recommended course of action.
        iv. Any other pertinent information, especially if an informational letter was not sent previously.
6. Letter Review and Distribution
        i. *Who*: Commission Chair, and anyone else (including other Commission technical committees) that he/she deems appropriate
        ii. *What*: A brief opportunity to review the recommended course of action letter and request changes. After those changes are incorporated, the letter shall be sent to the responsible permitting agency.
        iii. *When*: This process shall be completed in a timely fashion, according to the temporal restrictions set by the given comment period. This may require that deliberations and voting happen electronically.

11.0 COMMENTING ON OTHER NON-ASMFC DOCUMENTS

The following process describes the review of a non-ASMFC document that is not a project or permit proposal. This process was developed following a request by the Commission Chair for the Habitat Committee to comment on the 2007 Draft Framework for a National System of Marine Protected Areas.

1. The ISFMP Policy Board, or Commission Chair, may request at any time that the Habitat Committee formally review and comment on a non-ASMFC document that is not a project or permit proposal.
2. If members of the Habitat Committee would like to initiate comment on a non-ASMFC document, they may approach the ISFMP Policy Board with a request to allow comment from the Commission.
3. If the Habitat Committee is directed to comment on a non-ASMFC document by the ISFMP Policy Board, or Commission Chair, they shall complete a review in a timely manner as organized by the Habitat Coordinator.
4. Prior to submitting their review, the Committee's comments shall be provided to the Commission Chair, and if deemed necessary the Policy Board, for consent.

APPENDIX 1. ISFMP FISHERY MANAGEMENT PLAN OUTLINE

This document outlines the contents of Commission FMPs developed by the ISFMP. It contains FMP elements required by the ISFMP Charter as well as suggestions on other sections, should information on these elements be available.

It is intended that this outline be a working document for use by PDTs, PRTs, and others in drafting, compiling, and reviewing FMPs as guidance in FMP development and implementation. The ISFMP Charter, Section Six, lists the required elements of a FMP.

This outline was adopted by the ISFMP Policy Board during the Spring Meeting in Atlantic Beach, North Carolina on May 20, 1999. Suggestions for additional changes to the FMP outline are welcomed and should be forwarded to ISFMP Staff.

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APPENDIX 2. CONDENSED HABITAT FMP OUTLINE

The following is a quick reference for all of the habitat related sections within the Commission's FMP outline.

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    - E. Adult Habitat
  - 1.4.1.2: Identification and Distribution of Habitat and Habitat Area of Particular Concern
  - 1.4.1.3: Present Condition of Habitats and Habitat Area of Particular Concern
  - 1.4.1.4: Ecosystem Considerations

1.5: Impacts of the Fishery Management Program
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  - 5.1.1.5: Habitat Requirements

6.0 MANAGEMENT AND RESEARCH NEEDS
6.2: Research and Data Needs
- 6.2.4: Habitat

APPENDIX 3. DEVELOPING AND/OR UPDATING HABITAT SECTIONS OF ASMFC FMPS

The numbering of the following sections corresponds to the ISFMP Outline for FMPs. Please note that this numbering is subject to change in any given FMP depending upon the included sections.

1.0 INTRODUCTION

1.4: Habitat Considerations

1.4.1: Habitat Important to the Stocks

1.4.1.1: Description of the Habitat

This subsection should describe the habitats, including the associated biological community, which are typically used by the species. Habitats should be classified by life stage to include spawning, egg/larvae, juvenile, sub-adult, and adult resident and migratory habitats.

General descriptions of the functional habitat types (e.g., intertidal marsh, SAV beds, oyster reefs, etc.) that the species uses should be presented, along with a description (narrative, maps, and figures) of the distribution of these habitats. Overall range maps are appropriate, and the use of GIS is encouraged. General migratory pathways should also be identified. Some states have classified/identified areas with important habitat attributes and/or functions for fish such as, "Outstanding Florida Waters" and "Aquatic Preserves" in Florida, and "Primary Nursery Areas", "Strategic Habitat Areas," and "Outstanding Resource Waters" in North Carolina. These areas have significance in the states' permitting programs, and should be integrated here if they overlap with habitat where the species is found. Additionally, the seasonality of the species should be addressed.

Information on biological, ecological, physical, and chemical habitat variables should be included in this subsection. Ecological variables include the biological community upon which the species depends (e.g, preferred prey species, or preferred or obligate habitats such as shell beds or submerged aquatic vegetation) or with which the species is associated. Characteristics such as substrate preference, dissolved oxygen levels, temperature, salinity and other pertinent variables should be identified. If habitat "dependence" has not been documented, then habitat utilization or association should be presented in this subsection. Where possible, documented linkages between habitat and species production should be described.

Approaches

A number of approaches have been used to identify species-specific fisheries habitats. Approaches should be combined in order to present the best information with the widest geographic coverage, on a local scale.

Species distribution and/or relative abundance as indicated by fishery independent surveys has been proposed as a surrogate for habitat preference. This approach is useful; however, it is limited by the geographic and technical bounds of the fishery independent survey and possibly by selectivity of the gear employed for the survey, and should be augmented by additional information.

Important habitats for managed species have also been identified by local technical experts. Peer reviewed information of this type, including a review of relative abundance and distribution data, has been assembled for most Atlantic estuaries by the National Ocean Service.

In most cases, species-specific information is not available for all local habitats. In these instances, alternative information should be presented. Examples of alternative information include habitat suitability modeling, identification of usable habitats, and presentation of information for similar species. The limitations of each of these approaches should be clearly stated, and multiple approaches should be considered.

A method applied to coastal fisheries habitats that may have more significant use in the future is habitat suitability (HSI) modeling (USGS: http://www.nwrc.usgs.gov/wdb/pub/hsi/hsiintro.htm). This methodology includes the identification of specific habitat variables that are significant to the distribution of the species. The coexistence of these variables can then be identified regionally and used to predict species presence in areas where species distribution is unknown. HSI modeling is limited by both the number of developed and tested models and the geographic range over which the assumptions are valid.

The identification of usable habitats is similar to habitat suitability modeling, although somewhat less refined. It simply includes the regional identification of all habitat types that are used by the species or with which the species is associated in other regions.

Finally, for species for which a paucity of information exists, identification of habitats used by similar species (i.e., species of the same genus or with similar life history characteristics) should be used as a surrogate.

Elements and format

1. A narrative description of important habitats, including the elements discussed above. Information should be presented using the following outline:

I. Description of Habitats (including residence and migration routes)
- A. Spawning Habitat
- B. Eggs & Larvae Habitat
- C. Juvenile Habitat
- D. Sub-Adult Habitat
- E. Adult Habitat

2. Maps describing local and regional habitats, migratory routes, and seasonal species ranges.

3. A table that includes any significant environmental factors affecting the species at different life stages such as, but not limited to, habitat bottlenecks[5], ecological functions, changing predator/prey niches, climate change, etc. with citations for all information included.

[5] A habitat bottleneck is defined as a constraint on a species' ability to survive, reproduce, or recruit to the next life stage that results from reductions in available habitat extent and/or habitat capacity and reduces the effectiveness of traditional fisheries management options to control mortality and spawning stock biomass.

1.4.1.2: Identification and Distribution of Habitat Area of Particular Concern

The intent of this subsection is to identify habitat areas or habitat area of concern that are unequivocally essential to the species in all their life stages, since all used habitats have already been identified in Subsection 1.4.1.1.

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: (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. Descriptions of EFH are not currently being included in FMPs prepared for species solely under Commission management. The definition of HAPC is therefore modified to be areas within the species' habitat that satisfy one or more of the aforementioned criteria. ***When an HAPC is described for a species solely under the management of the Commission, the designation does not have any regulatory authority. Please refer to the ASMFC HAPC document for a list of species under Commission management only and description of the corresponding HAPC (ASMFC 2013b).***

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 HAPC may be difficult.

Examples of HAPC include: any habitat necessary for the species during the developmental stage at which the production of the species is most directly affected; 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.

The extent of habitats or HAPC for a species may depend on factors such as habitat bottlenecks, the current stock size and/or the stock size for which a species Management Board and Technical Committee establishes targets, etc. Given the current state of knowledge with regard to the relationship between habitat and production of individual species, this information may not be available for many species.

If known, the historical extent of HAPC should also be included in this subsection, in order to 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.

1.4.1.3: Present Condition of Habitats and Habitat Area 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” (ASMFC, 2008), “forage habitat bottleneck has reduced the young-of-year populations by thirty percent”, or “fishing gear continues to disturb fifty percent of the forage habitat”, etc.

Any habitats or HAPCs that have diminished over time due to habitat bottlenecks should be incorporated to the extent information is available. Habitat bottlenecks can occur due to natural disasters, fishing disturbance, impacts of development, or other complex processes that can cause habitat shifts. This subsection can further address options to reverse or restore current known habitat bottlenecks.

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, addressing 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 or salinity 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 (e.g., heavy metals or chemical contamination which results in the posting of consumption advisories, or prohibition of commercial fisheries for a species, e.g. striped bass in the Hudson River, NY).

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.

Elements and format

This subsection should include separate segments for each different type of habitat that was identified in Subsection 1.4.1.1. The following outline should be used:

I. Habitat Type 1

A. Estimates of habitat quantity and any changes over time, such as but not limited to aerial extent and trends over time, availability to the species and changes in availability, etc.
B. Description of habitat quality and any changes over time, such as but not limited to water quality, functional ability of wetlands, etc.
C. Description of current threats, including:
    a. What is the magnitude of the impact, especially in light of the use by the species?
    b. What is the length in time of the impact and does it occur when the habitat is used by the species?
    c. Are the impacts irreversible?
    d. How can the impacts be avoided, minimized, or mitigated? (This information will be especially important for Section 4.4)
    e. Estimates of cumulative and secondary impacts to the habitat.

f. Known or suspected habitat bottlenecks.

D. Any affects of degradation or loss of this habitat on the ability to harvest and/or market the species.

II. Habitat Type 2 (etc.)

1.4.1.4: Ecosystem Considerations

There are increasing attempts to incorporate ecosystem management into fisheries management, currently referred to as ecosystem based fisheries management. Ecosystem based fisheries management can be interpreted as: a) the incorporation of the protection and enhancement of habitat features that contribute to fish production into the fishery management process; and b) the consideration of how the harvest of one species might impact other species in an ecosystem and incorporating that relationship into management decisions (i.e., forage considerations). The process of considering more than one species in fisheries management decisions is also called multi-species management. For the purposes of this section, the focus would be on the important habitat features that contribute to fish production. To address part b) multispecies management, the Management & Science Committee should be consulted.

Human activities can influence habitats or entire ecosystems by altering one or multiple elements contributing to such systems at any time. Given that the flow of energy and nutrients between organisms and their environment provide the framework for understanding ecosystems, a focus on ecological function and how abiotic structure and other habitat elements affect the biotic community structure and vice versa is essential. Abiotic factors include the space providing connectivity between specific life history stage habitats, spatial and temporal uses of those habitats, water quality and quantity, and the physical changes to these factors over time. Biotic factors include the position of these species within the food web (i.e., forage species, predator/prey), community dynamics, biotic engineering of habitat, etc.

In addition, the spatial and temporal resiliency of the system (the measure of the ability of a system to withstand stresses and shocks, and recover to pre-stress characteristics) is another consideration to include in this section.

This section should focus on ecosystems functions on a landscape scale rather than duplicating habitat use information contained in the preceding sections of this document. Changes in ecological functions, shifts, or dynamics resulting in or from habitat bottlenecks may be discussed within this section if not previously addressed.

3.0 MONITORING PROGRAM SPECIFICATIONS/ELEMENTS

Section 3.7: Habitat Monitoring Program

The purpose of this section is to outline habitat monitoring considerations for a given FMP. Building upon the baseline information covered in Section 1.4, FMP developers are encouraged to identify specific habitat variables (e.g., spatial extent and type of SAV beds) that should be monitored that are significant to the distribution of the species. This section may also include information on existing habitat monitoring programs. The goal of habitat monitoring programs should be to provide guidance

to achieve integration of fish management activities with management of habitat and Habitat Area of Particular Concern.

It is recommended that population monitoring surveys and stock assessments be coordinated with existing state, federal, and regional habitat monitoring programs to achieve cost benefits and allow for synthesis of water quality, aquatic habitat, and watershed information to better assess whether declines in fishery stocks are caused by degraded habitats or ecosystems.

Section 1.4 provides a strong foundation for the establishment of a robust monitoring plan. FMP authors and managers are encouraged to use all available information to determine those limiting factors that can best serve as timely indicators of habitat loss or degradation. It is recommended that documented linkages between habitat and species production and/or mortality be described.

The identification, distribution, and present condition of habitat and HAPC (Subsections 1.4.1.3 and 1.4.1.3) requires extensive background information to determine what areas are unequivocally essential to the species. These subsections will already describe many of the currently reported habitat variables that are applied by state, federal, regional, and other fishery management entities to monitor habitat condition. By maximizing the use of existing data and monitoring programs, FMP developers may recommend that certain factors be periodically observed and documented to detect changes in habitat quality or quantity.

With the emerging need and challenges for developing new indicators for specific habitat bottlenecks/limitations for species any new improved methodology or modern/cutting edge monitoring tools should be identified to help developing monitoring plans. Inadequate or missing data are bottlenecks in and of themselves. Identify inadequately specified or insufficiently quantified causes or data relating to bottlenecks to help managers plan the most effective ways for monitoring. Identify any developed approaches for enhancing bio-complexity and key habitat features (e.g., seagrass, connectivity, etc.) required to boost habitat rehabilitation processes.

Elements of a monitoring program should include the following:

1. Development of a monitoring plan based on historic and existing habitat quality and quantity records/data.
2. Designation of reference sites based on life stage requirements.
3. Determination of appropriate spatial and temporal scales for monitoring specific habitat types and locations.
4. Coordination of monitoring of essential habitat across all life stages.
5. Enhanced coordination of fish stock assessment and management with habitat monitoring.

As the Atlantic Coast fisheries community moves toward ecosystem-based adaptive management that is more integrated with coastal habitat, existing monitoring programs on local and regional scales should be better coordinated to provide efficient and meaningful monitoring to quantify and track changes in quality habitat for the life stages of all fishes. A broad overview of existing monitoring programs has revealed common approaches, issues, and needs for a future Atlantic Coast monitoring program. An author may want to consider reviewing the design elements of and recommendations from the National Estuary Program (NEP) and the corresponding jurisdictions' Comprehensive

Conservation and Management Plans (CCMPs) (e.g. APNP 2012). Below are elements that should be considered for such a monitoring program:

1. Issues and options associated with monitoring programs

A. Scale:
   1. Regional vs. site specific - broad indicators/remote sensing tools vs. single indicators
   2. Regional approaches – existing landscape approaches e.g. river basin/coastal association or Commission data
   3. Species range approach – monitor on a species by species FMP approach

B. Frequency: Cost-benefit

C. Prediction: Quantify/track cumulative effects of climate change, habitat bottlenecks, and continued watershed and coastal development on aquatic habitat
   1. Land use/management plans to select landscape indicators
   2. Climate prediction models to select precipitation/storm surge effects to monitor

D. Location: Overlay all life-stage habitat types for all species with FMPs and develop coordinated monitoring by location

E. Existing fish stock information: Coordinate with collection and analysis of habitat information

2. Monitoring indicators: Referenced with natural variation and analyzed spatially/temporally

A. Large-scale: Remote sensing and existing monitoring programs- coordinate and fill gaps
   1. Land use – include infrastructure (roads, etc.), water, development, dredging, channelization, riprap, etc.
   2. Specific habitat types (quantity and quality)
   3. Temperatures of rivers, tributaries, estuaries, and oceans – ridge to reef
   4. Sediment movement and changes
   5. Water quality and quantity
   6. Other known habitat bottlenecks indicators

B. Intermediate-scale: Aquatic communities, species numbers, diversity, and distributions

3. Integration of habitat and water quality data with fishery monitoring data through Geographic Information System (GIS) analysis

4.0 MANAGEMENT PROGRAM IMPLEMENTATION

4.4: Habitat Conservation and Restoration

This section should emphasize that each state should implement identification and protection of habitat for the given species within its jurisdiction, in order to ensure the sustainability of important life history stages that either are produced or reside within its boundaries. It should also be noted that such efforts should inventory historical habitats, identify habitats presently used, and specify those that are targeted for recovery, and impose or encourage measures to retain or increase the quantity and quality of essential habitats for the given species.

Information from previous sections, including EFH (for joint Commission/federal plans), HAPCs, and other known habitat used by the species, should all be considered in crafting recommendations for fish habitat conservation and restoration. This will ensure protection of all values and benefits of habitat

for fisheries, and aid in making decisions on setting priorities for fish habitat restoration. This section of the plan should integrate the discussion from Subsections 1.4.1.1 through 1.4.1.4, in developing the recommendations for habitat conservation/restoration. These recommendations should come from an assessment of the qualitative and quantitative information on habitat, the health of the stock, and the status of the fishery.

Recommendations should be directed to the state marine fisheries agency, since these are the agencies involved in development of FMPs. Often the objective of habitat related recommendations will be carried out by another entity such as a state water quality agency. In these cases, the recommendation should be worded so that it directs the state marine fisheries agency to either communicate the recommendation to the other entity, or, to the best of its ability, ensure that the other entity meets the recommended objective. The recommendation must be clearly stated and may require substantial explanation in order to facilitate its implementation, especially when the objective may be met by another entity.

A number of habitat-related recommendations are listed below which may be appropriate for many FMPs and should be considered for inclusion in the habitat section. These recommendations should be considered in addition to the species-specific recommendations that should be identified from Subsections 1.4.1.1 through 1.4.1.4.

4.4.1: Preservation of Existing Habitat

Example Recommendations

1. States containing spawning and other essential habitats, such as nursery areas, for the given species, should notify the appropriate federal and state regulatory authorities, in writing, of the locations of habitats utilized by the species.
2. Regulatory agencies should be advised of the types of threats to populations of the given species, and recommended measures that should be employed to avoid, minimize, or eliminate any threat to current habitat extent or quality.
3. Where sufficient knowledge is available, states should seek to designate essential habitats for the given species for special protection. These locations should be designated "High Quality Waters" or "Outstanding Resource Waters," and should be accompanied by requirements for non-degradation of habitat quality, including minimization of non-point source runoff, prevention of significant increases in contaminant loadings, and prevention of the introduction of any new categories of contaminants into the area.
4. State marine fisheries agencies should coordinate with state water quality agencies and state coastal zone management agencies to ensure that Clean Water Act Section 319 non-point source control plans and Coastal Zone Act Reauthorization Amendment Section 6217 coastal non-point source control plans are developed and implemented so as to minimize adverse impacts of non-point source pollution on the species. In particular, marine fisheries agencies should consider whether areas merit designation as critical coastal areas under state 6217 programs (non-point source pollution control under the Coastal Zone Management Act amendments of 1990) due to water quality impacts to fish habitat, and should provide input to the 6217 lead agencies.
5. State marine fisheries agencies should coordinate with and provide input to the state water quality agency in development and updating of the Clean Water Act section 303(d) list (priority

list of water not meeting state water quality standards). In addition, state marine fisheries agencies should review the adequacy of water quality standards to protect the species of concern and should participate in the triennial review of the state water quality standards.

6. State fishery regulatory agencies should develop protocols and schedules for providing input on water quality state regulations to the responsible agency, to ensure to the extent possible that water quality needs for the given species are restored, met, and maintained.
7. State fishery regulatory agencies should develop protocols and schedules for providing input on Federal permits and licenses required by the Clean Water Act, Federal Power Act, and other appropriate vehicles, to ensure that habitats are protected for the given species.
8. Water quality criteria for spawning and nursery areas should be established or existing criteria should be upgraded to levels which are sufficient to ensure successful reproduction. Any action taken should be consistent with Federal Clean Water Act guidelines and specifications.
9. All state and federal agencies, including regional fishery management councils, responsible for reviewing impact statements and permit applications for projects or facilities which may impact spawning and nursery areas should provide appropriate recommendations or mandate measures to ensure that those projects will have no or only minimal impact on spawning stocks. Any project which would result in the elimination or significant degradation of essential habitat should be avoided.
10. State marine fisheries agencies should identify the state permitting and planning agencies that regulate those activities identified in Subsection 1.4.1.3 as likely to adversely affect HAPCs and habitats, either by destruction of habitat or degradation of quality. The marine fisheries agency should work with the relevant permitting or planning agency in each state to develop permit conditions and planning considerations to avoid or mitigate adverse impacts on HAPCs or other habitats necessary to sustain the species. Standard permit conditions and model policies that contain mitigation techniques should be developed. The development of Memoranda of Understanding (MOUs) with other state agencies are recommended for joint review of projects and planning activities to ensure that habitat protections are adequately incorporated. North Carolina passed the North Carolina Fisheries Reform Act in 1997, which requires the state to develop Coastal Habitat Protection Plans (CHPP). These CHPPs could be used a model for the implementation of planning process to protect HAPCs (e.g. Deaton et al. 2010). When impacts to a habitat or species are expected to occur from an activity described in Subsection 1.4.1.3, actions should be initiated to eliminate or substantially reduce these impacts. This could be in the form of limiting the time frame the activity could be done (e.g., establishing dredging windows to avoid impacts to susceptible life stages) or other acceptable alternative approaches that can be demonstrated to avoid or minimize harm.
11. State marine fisheries agencies should coordinate with appropriate state agencies to strengthen compliance with National Pollutant Discharge Elimination System (NPDES) or State Pollutant Discharge Elimination System (SPDES) permits.
12. State marine fisheries agencies should work with state coastal zone management agencies to determine whether:
    a. additional state policies for habitat protection should be adopted under the state coastal management program
    b. additional federal activities should be added to the state coastal management programs list of activities subject to state consistency review

c. the state is fully utilizing the Coastal Zone Management Act federal consistency process for protection of fish habitats

4.4.2: Habitat Restoration, Improvement, and Enhancement

Example Recommendations

1. Each state should review existing literature and data sources to determine the historical extent of occurrence of and habitat use by the given species within its jurisdiction. Further, an assessment should be conducted of areas historically but not presently used by the given species, for which restoration is feasible.
2. Every effort should be made to eliminate existing contaminants from habitats where a documented adverse impact occurs to the given species.
3. States should work in concert with the USFWS, Divisions of Fisheries and Ecological Services, and NOAA Fisheries, Office of Habitat Conservation, to identify hydropower dams that pose significant threat to maintenance of appropriate freshwater flows to, or migration routes for, spawning and/or nursery areas, and target them for appropriate recommendations during Federal Energy Regulatory Commission (FERC) relicensing evaluation.
4. When states have identified habitat restoration as a need, state marine fisheries agencies should coordinate with other agencies to ensure that habitat restoration plans are developed and funding is actively sought for plan implementation and monitoring.
5. State marine fisheries agencies should work closely with water quality agencies in the development or revision of river basin plans to identify degraded or threatened resources and recommend preventative, remedial, or mitigation measures.
6. State marine fisheries agencies should work with the appropriate agencies to develop contaminated sediment remediation plans or active sediment pollution prevention programs for areas with or susceptible to sediment contamination.
7. State marine fisheries agencies should coordinate with appropriate National Estuary Programs (NEP), National Wildlife Refuges (NWR), and National Estuarine Research Reserves (NERR) to ensure that NEP, NWR, and NERR Comprehensive Conservation and Management Plans identify and implement habitat protection and restoration needs.

4.4.3: Avoidance of Incompatible Activities

Example Recommendations

1. Federal and state fishery management agencies should take steps to limit the introduction of compounds that are known or suspected to accumulate in fish tissue and that pose a threat to human health or fish health [see Table 10.1 in Taub (1990)].
2. Each state should establish windows of compatibility for activities known or suspected to adversely affect life stages and habitats of the given species, such as navigational dredging, bridge construction, and dredged material disposal, and notify the appropriate construction or regulatory agencies in writing.
3. Projects involving water withdrawal from spawning or nursery habitats (e.g. power plants, irrigation, water supply projects) should be scrutinized to ensure that adverse impacts resulting from larval/juvenile impingement, entrainment, and/or modification of flow, temperature and

salinity regimes due to water removal will not adversely impact spawning stocks, including early life stages.

4. Each state which contains spawning and nursery habitat areas within its jurisdiction should develop water use and flow regime guidelines which are protective of spawning and nursery areas and that will ensure to the extent possible the long-term health and sustainability of the stock. States should endeavor to ensure that proposed water diversions/withdrawals from rivers tributary to spawning and nursery habitats will not reduce or eliminate conditions favorable to use of these habitats by the given species.
5. When impacts are expected to occur from an activity described in Subsection 1.4.1.3, but probably not above some *de minimus* level, prohibition of the activity may not be warranted, but the marine fisheries agency should request that the appropriate agency consider requiring application of Best Management Practices for the activity.
6. State marine fisheries agencies should review oil spill prevention and response plans for preventing accidental release and recommending prioritized response in HAPCs.
7. State marine fisheries agencies should work closely with the appropriate United States Coast Guard District Office in the development, amendment, and implementation of area-wide oil spill contingency plans.

4.4.4: Fisheries Practices

Example Recommendations

1. The use of any fishing gear or practice which is documented by management agencies to have an unacceptable impact on the given species (e.g., habitat damage, or bycatch mortality) should be prohibited within the effected essential habitats (e.g., trawling in spawning areas or primary nursery areas should be prohibited).

4.4.5: Habitat Monitoring

Example Recommendations

1. States already conducting monitoring of estuarine, coastal, and marine habitats (for any reason) that are listed as HAPCs in the FMP should seek to coordinate habitat monitoring with ISFMP fishery data collection.
2. States already conducting monitoring of estuarine, coastal, and marine habitats (for any reason) that are listed as HAPCs in the FMP should seek to coordinate monitoring activities, including indicator selection, sampling methods, and spatial and temporal approaches.
3. Every effort should be made to eliminate duplication of effort among state, regional, and federal monitoring programs, and to coordinate monitoring across the species range and life history.
4. States should work with regional and federal programs to coordinate monitoring of estuarine, coastal, and marine HAPCs.
5. State agencies conducting restoration activities in HAPCs should work with all other agencies responsible for implementation of the FMP to develop a monitoring program that measures the effectiveness of restoration efforts.

5.0 COMPLIANCE

5.1: Mandatory Compliance

5.1.1: Mandatory Elements of State Programs *(as applicable)*

5.1.1.5: Habitat Requirements

FMP recommendations and requirements differ in that **requirements** are mandatory actions under the Atlantic Coastal Fishery Cooperative Management Act (P.L. 103-206 et. seq.), which may result in penalties if not implemented. An example of an issue that is appropriate to address as an FMP requirement is a significant impact to a HAPC from fishing gear. ISFMP staff species coordinators should be consulted for further information on the use of required measures in FMPs, and the appropriateness of habitat-related requirements that may be considered for inclusion in this section.

6.0 MANAGEMENT AND RESEARCH NEEDS

6.2: Research and Data Needs

6.2.4 Habitat

This section should contain any recommendations, preferably in priority order, for research that the Commission views as necessary for the sound management of the species and its habitat. This may include basic life history information, which will result in the more complete identification of the habitat requirements or bottlenecks of the species for all life stages, tagging studies for determination of migratory pathways and habitat use patterns, and other habitat related information. Recommendations should be developed by reviewing Subsections 1.4.1.1 through 1.4.1.4, and identifying topics requiring further information.

Research recommendations should provide for the comprehensive identification of the habitat requirements of the species, or species assemblages, that define the interrelationship between the species, its environment, potentially perturbing natural and human activities, and habitat bottlenecks. Research is encouraged at an appropriate spatial and temporal scale that is directed at determining and reasonably predicting the impacts of natural and human activities on HAPCs. The habitat research plan of the NOAA Fisheries may be a useful reference, since it provides a framework to conduct coastal and estuarine research, and, most importantly, transfers results to those management components involved in permit reviews and development of habitat sections of FMPs.

APPENDIX 4. REFERENCES

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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.

Description of HAPC from ASMFC's ***Habitat Operational Procedures Manual, 2008***

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

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: **(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**. 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.

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.

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.

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.

If known, the historical extent of HAPCs should also be included in this subsection, in order to

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.

Table of Contents

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)

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^{o} C, depths from 20-80 meters and a salinity ranges from 32-33$^{o}/_{oo}$. 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^{o} 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^{o} C, water depths from 50-90 meters, and salinities around 32$^{o}/_{oo}$. 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^{o} C, water depths from 15-135 meters and a salinity range from 26-32$^{o}/_{oo}$.

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^{o} C, water depths from 20-130 meters and salinities above 28$^{o}/_{oo}$.

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°/₀₀. 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.

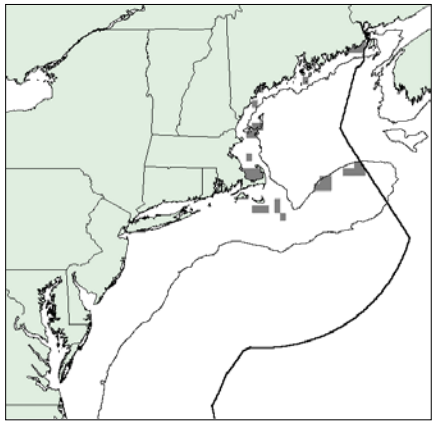


Figure 6. NEFMC EFH designations for Atlantic herring larvae.

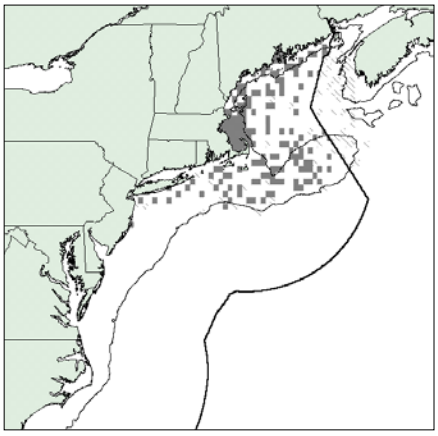


Figure 7. NEFMC EFH designations for Atlantic herring juveniles.

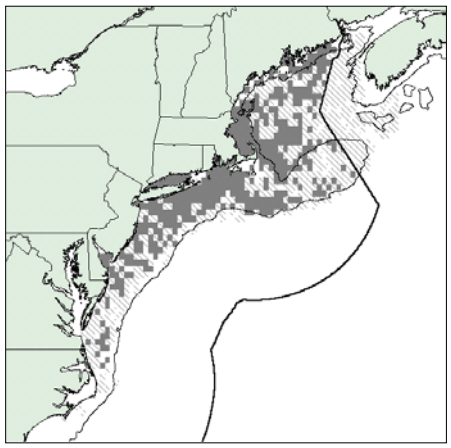
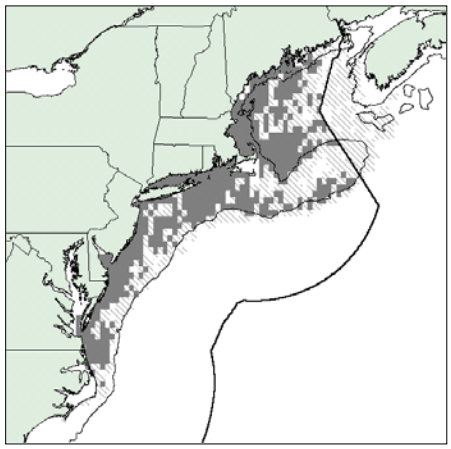


Figure 8. NEFMC EFH designations for Atlantic herring adults.



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. I t 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 oxyrhincus*)

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 Okracoke 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.

HAPC Designation from Amendment 1 to the FMP for the Bluefish Fishery
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 horseshow 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).

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.

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).

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 course 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 permienter, 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 Founder 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) 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]