MEMORANDUM

Date: May 29, 2014
To: Ecosystem and Ocean Planning Committee
From: Jessica Coakley, Staff
Subject: June 10th Committee Meeting

The Committee is meeting June 10 to receive presentations on National and Regional habitat initiatives and to discuss the role of this Committee under the 2014-2018 Strategic Plan. The following strategies that relate to habitat are contained within the plan:

**Strategy 8.1** - Encourage the collection of habitat data that will support methodologies and subsequent management measures that link habitat protection more directly to increased fish production.

**Strategy 15.1** - Complete and implement the "Ecosystem Approach to Fisheries Management Guidance Document."

**Strategy 15.2** - Incorporate consideration of species interactions into fishery management plans and coordinate these considerations across appropriate management plans.

**Strategy 15.3** - Determine and incorporate the relationship between essential fish habitat and productivity of marine resources into management decisions.

**Strategy 15.5** - Develop management approaches that minimize adverse ecosystem impacts.

In preparation for the Committee meeting, please review these background documents on Federal and State habitat initiatives, available at the following websites:

http://www.habitat.noaa.gov/habitatblueprint/northatlantic.html
Ecosystem and Ocean Planning Committee Meeting

AGENDA

Tuesday, June 10, 2014

1:00pm  - Convene Meeting/Introductions

1:05pm  - Presentation by Lou Chiarella on NOAA National and Regional Habitat Initiatives and "Habitat Conservation: Increasing Fishery Productivity.'

1:45pm  - Presentation by Toni Kerns on "Atlantic Coastal Fish Habitat Partnership Initiatives."

2:45pm  - Review 2014-2018 Strategic Plan Ecosystem and Habitat Related Objectives
         - Review Habitat Pilot Project

4:00pm  - Meeting Adjourns
Fish require healthy surroundings to survive and reproduce. Essential fish habitat includes all types of aquatic habitat where fish spawn, breed, feed, and grow to maturity. To date, the Mid-Atlantic Fishery Management Council (Council) has identified the essential habitat for every life stage of its managed species using the best available scientific information and has developed several habitat areas of particular concern (HAPCs). HAPCs are considered high priority areas for conservation, management, or research because they are rare, sensitive, stressed by development, or important to ecosystem function. However, these HAPC designations have been made in the single species context and the Council has made relatively limited use of the HAPC provisions and other place-based approaches. Identifying HAPCs that are critical for the productivity of Mid-Atlantic fish populations, in a more holistic, multi-species context, is essential for maintaining healthy ecosystem and sustainable fisheries.

As the Council develops an Ecosystem Approach to Fisheries Management (EAFM) Document, under its 2014-2018 Strategic Plan, it will become necessary to identify HAPCs for Mid-Atlantic managed fish and shellfish species. Proactive identification of these areas will enable the Council to reduce or mitigate impacts from anthropogenic (human-caused) activities, such as certain fishing practices as well as coastal and marine development, which threaten to alter, damage, or destroy these habitats. In the larger context, making fisheries management decisions and recommendations in an ecosystem context will make Mid-Atlantic fisheries more resilient to changes in coastal and ocean habitats due to development, climate, and other pressures.

This project will enhance the ability of the Council, NOAA Fisheries, and other Federal agencies to work together to minimize these threats and support activities that enhance or maintain marine fisheries productivity by identifying multi-species priority areas (HAPCs) and using place-based habitat solutions to address coastal and marine resource challenges. Productive commercial and recreational fisheries are inextricably linked to healthy marine habitats. Protecting and restoring these habitats will help support Mid-Atlantic fisheries and coastal economies.

The specific project objectives are to:

1) Produce a report on current practices and objectives used in the identification of critical habitat areas in the US and abroad.
2) Develop Council policy statements on anthropogenic activities in our region that may affect fish habitat, from which overarching habitat objectives for the EAFM Document will be derived.
3) Utilize the EFH Geodatabase Project in conjunction with Council EAFM habitat objectives to develop multi-species HAPCs.
4) Identify a process for monitoring success relative to those habitat objectives.
**Project Description**

The following sections describe the proposed habitat project as three parts to achieve the objectives above. An oversight team comprised of staff from the Council, NOAA Fisheries Habitat Division (headquarters and regional offices), the contractor, and one or two other Habitat experts if needed, will be formed to oversee all three parts of the project. This group will meet periodically via conference call and in person to ensure the projects objectives are being met. This group will also be responsible for reviewing 6-month progress reports and project deliverables described below. Approximately 3 oversight team in-person meetings will be needed throughout this project. These will likely be held near airports convenient to NOAA Fisheries Silver Spring and Gloucester offices (e.g., Baltimore, MD and Boston, MA). The oversight team will hold a meeting as the first action under this project. Please note travel funds are for non-federal members of the oversight team.

**Part 1: Meta-analysis of Habitat Practices**

In order to move forward in the development of HAPCs for Mid-Atlantic species, it is critical to gain insight by evaluating the current practices and objectives used in the identification of critical habitat areas. In the first part of the project, a report will be developed that summarizes current practices on this topic. The 8 US Fishery Management Councils will be contacted to obtain details of their current practices, as well as other foreign Fisheries Management Entities (e.g., Canada, EU, AU, etc.). This will serve as a baseline from which any new or innovative approaches can be developed. It will provide a tool of reference for not only the Mid-Atlantic Council, but also the other Councils and NOAA Fisheries Habitat Division.

Research to produce this report will be conducted by a combination of Council staff time and use of contractor support. A draft of the final report will be made available to the oversight team for review and final approval, prior to printing and distribution.

**Part 2: Council Habitat Policy Statements and Habitat Objectives**

The second part of the project will involve developing Council policy statements on anthropogenic activities in our region that may affect fish habitat, from which overarching habitat objectives for the EAFM Document will be derived.

This will require a series of meetings involving the Council’s Ecosystem and Ocean Planning Advisory Panel (AP). This AP was originally populated in a manner similar to many of the other Council species FMP based APs, with commercial and recreational fishing industry members and ENGO staff representatives. However, the current membership is not sufficient to meet this proposed purpose. Therefore, invited experts would attend these AP meetings, such as NOAA Fisheries Habitat Division staff, ASMFC staff, state (NY-NC) coastal zone management experts, and USFWS staff. Travel funds are for non-federal members attending these AP meetings. The Council could consider modifying the permanent membership of its Ecosystem and Ocean Planning AP depending on the effectiveness of these meetings and anticipated future role of the AP. It is anticipated this will require 3 AP meetings, lasting about 1.5-2 days per meeting to accomplish this task.
Background documents on coastal activities, such as fishing gear impacts, wind energy production, offshore oil, gas, and mineral extraction, nearshore and offshore aquaculture, would be prepared by Council staff working with the contractor in advance of the meetings. This will include draft policy statements (as a starting point) for the AP to consider. The oversight team will identify a list of critical activities that should be addressed in this initial round of policy document development. These documents will be provided to the AP and the group will identify specific habitat policies relative to these issues that are consistent with the Council strategic plan, FMP goals, and any applicable laws and guidelines. At the last AP meeting, these policy documents will be synthesized and 3-5 measurable objectives will be derived from these policies. While the initial creation of these documents and objectives will be intensive, the future periodic updating and review of these documents, to ensure they remain current will be less intensive. An appropriate review interval will need to be determined. For example, review could be synchronized with the development of the Council's 5-year Strategic Plan.

These policy documents and habitat objective will then be provided to the Ecosystem and Ocean Planning Committee for review and approval, and then ultimately forwarded for review and approval by the Council. The review of the policy documents and habitat objectives will likely require a 1-2 day Ecosystem and Ocean Planning Committee meeting. These habitat objectives would feed directly into objectives contained within the Council's EAFM Document, which is expected to drive Council activities relative to the FMPs and other Council activities. In addition, the AP would identify a process for reviewing progress towards these objectives. For example, this could be linked to the Council's 5-year Strategic Plan Process.

The oversight team will likely meet between the first and second AP meeting, to review the effectiveness of the process, and determine if any adjustments need to be made to ensure the project objectives are being met. They will also likely meet prior to the Ecosystem and Ocean Planning Committee meeting to review policies and objectives. In addition, Council staff will travel to meet with another Council in August working on a similar project to develop measurable habitat objectives (i.e., West Coast Objectives Workshop), to exchange project approaches and methods.

**Part 3: Multi-species HAPC Development**

The last part of this project will involve using the EFH Geodatabase Project (produced by NOAA Fisheries Sandy Hook Lab) in conjunction with Council EAFM habitat objectives to identify and develop multi-species HAPCs that will meet the habitat objectives set forward in the EAFM document. For this part of the project, Council staff will need an advanced GIS license. The advanced GIS license will be acquired for 1-year, and is for a single Council staff user. This will provide Council staff with more data analysis tools than are available through a basic GIS license. The Council will maintain the license until completion of the project if greater than that year, or if future Council habitat and ecosystem data analysis needs require that higher level of GIS licensing. The Council will likely wish to form a fishery management action team (FMAT) to work in conjunction with the oversight team during the development process. FMATs are staff work teams comprised of Council staff and NMFS-NERO and NEFSC staff. This group can work cooperatively with the oversight team to move this aspect of the project forward. If the EFH Geodatabase is complete, the information can be processed and mapped to identify critical
habitat areas based on species distribution, and the other objectives put forward by Part 2 of this project. It may be necessary to incorporate additional datasets into the process of identifying HAPCs. The expertise on the FMAT should be selected to facilitate full use of data and resources in the Northeast. These HAPC areas would then need to be discussed with the AP (at a 1-day meeting), at an Ecosystem and Ocean Planning Committee meeting, and then considered and approved ultimately the Council.

**Deliverables, Users, and Methods of Dissemination of Results**

Part 1 of the project should take approximately 6-8 months to complete research and drafting of the final report. The final printed report will serve as the primary deliverable for this project. The oversight team will be given approximately 30 days to review the final report, which is the deliverable for this project, and approve the document for printing and distribution. The report would be printed and distributed to the 8 Councils, NOAA Fisheries Habitat Division, and other parties. Results may also be communicated as presentations to fisheries managers at Council meetings, and outside groups such as American Fisheries Society meetings, etc.

For Part 2 of this project, the portfolio of policy documents and final Council objectives for the EAFM Document will serve as the primary deliverables. This part of the project should take approximately 1 year total. It is expected about 6 months will be necessary for the Oversight Team to initially meet, background documents to be prepared, and the first AP meeting to be scheduled. The remaining AP meetings, Ecosystem and Ocean Planning Committee Meeting, and Council meeting should be completed within the remaining 6 months. Results will be presented at Council meetings, and these documents will be posted on the Councils website.

The first two parts of this project will likely overlap. However, successful completion of Part 2 is needed in order to move forward with Part 3 of the project. Part 3 of the project should take approximately 1 year total. It is expected about 3-6 months will be necessary to develop and analyze potential HAPC areas working with the oversight team and FMAT. These areas would then need to be discussed through the Council process and then considered and approved ultimately by the Council; this could take several months to a year, depending on how that process evolves. The HAPC analyses and reports to the Council will be the primary deliverables for this project.

Progress reports will be prepared every 6 months and provided to the oversight team and grants office to highlight project accomplishments and progress toward completion. The reports will also highlight any adjustments to the process described above that were approved by the oversight team to ensure successful completion of all parts of the project.
POLICIES FOR THE PROTECTION AND RESTORATION OF ESSENTIAL FISH HABITATS FROM MARINE AQUACULTURE
(June, 2007)

Policy Context
This document establishes the policies of the South Atlantic Fishery Management Council (SAFMC) regarding protection of Essential Fish Habitat (EFH) and Essential Fish Habitat - Habitat Areas of Particular Concern (EFH-HAPCs) from potential impacts associated with marine aquaculture. The policies are designed to be consistent with the overall habitat protection policies of the SAFMC as formulated in the Habitat Plan (SAFMC 1998a) and adopted in the Comprehensive EFH Amendment (SAFMC 1998b) and the various Fishery Management Plans (FMPs) of the Council.

The findings presented below assess potential impacts, negative and positive to EFH and EFH-HAPCs posed by activities related to marine aquaculture in offshore and coastal waters, riverine systems and adjacent wetland habitats, and the processes which could place those resources at risk. The policies and recommendations established in this document are designed to avoid, minimize, and offset potential impacts from these activities, in accordance with the general habitat policies of the SAFMC as mandated by law. To address any future marine aquaculture projects in the South Atlantic region, or as legislation is developed to provide additional guidelines, the SAFMC will revise this policy when more information becomes available.

The recommendations presented here should be applied to aquaculture facilities in reasonable proximity to EFH and EFH-HAPCs, however managed. Current laws, regulations and policies differ for offshore aquaculture, and for aquaculture activities in nearshore and inshore waters managed by the various states. As the federal FMPs in the region are amended to address offshore aquaculture as “fishing” activities, then these recommendations should be factored into those FMPs. Where aquaculture remains outside federal FMP-based management, then EFH protection mechanisms for “non-fishing” activities should be used to protect EFH, wherever possible.
**EFH Potentially At Risk from Marine Aquaculture Activities**

The SAFMC finds that:

1. Properly sited, designed and managed marine aquaculture operations can have beneficial economic and environmental outcomes. However, marine aquaculture activities or associated support facilities can have the potential to cause adverse impacts to a variety of habitats across the shelf and to nearshore systems including:

   a) waters and benthic habitats in or near marine aquaculture sites,
   b) exposed hardbottom (e.g. reefs and live bottom) in shallow and deep waters,
   c) submerged aquatic vegetation beds,
   d) shellfish beds,
   e) spawning and nursery areas,
   f) coastal wetlands, and
   g) riverine systems and associated wetlands.

2. Certain offshore, nearshore and riverine habitats are particularly important to the long-term viability of commercial and recreational fisheries under SAFMC management, and are potentially threatened by marine offshore aquaculture activities, including:

   a) coral, coral reef and live/hardbottom habitat, including deepwater coral communities;
   b) marine and estuarine waters;
   c) estuarine wetlands, including mangroves and marshes;
   d) submerged aquatic vegetation;
   e) waters that support diadromous fishes, and their spawning and nursery habitats; and
   f) waters hydrologically and ecologically connected to waters that support EFH.

3. Construction and operation of poorly sited and/or designed aquaculture support facilities could adversely impact wetlands, other EFH and protected species’ habitats.

4. Sections of South Atlantic waters potentially affected by these projects, both individually and collectively, have been identified as EFH or EFH-HAPC by the SAFMC. Potentially affected species and their EFH under federal management include (SAFMC, 1998b):

   a) summer flounder (various nearshore waters; certain offshore waters);
   b) bluefish (various nearshore waters);
   c) red drum (unconsolidated bottoms in the nearshore);
   d) many snapper and grouper species (live hardbottom from shore to 600 feet, and – for estuarine-dependent species (e.g., gag grouper and gray snapper) – unconsolidated bottoms and live hardbottoms to the 100 foot contour);
   e) black sea bass (various nearshore waters, including unconsolidated bottom and live hardbottom to 100 feet, and hardbottoms to 600 feet);
   f) penaeid shrimp (offshore habitats used for spawning and growth to maturity, and waters connecting to inshore nursery areas);
g) coastal migratory pelagics (e.g., king mackerel, Spanish mackerel) (sandy shoals of capes and bars, barrier island ocean-side waters from the surf zone to the shelf break inshore of the Gulf Stream);

h) corals of various types and associated organisms (on hard substrates in shallow, midshelf, and deep water);

i) muddy, silt bottoms from the subtidal to the shelf break, deepwater corals and associated communities; and

j) areas identified as EFH for Highly Migratory Species managed by the Secretary of Commerce (e.g., sharks: inlets and nearshore waters, including pupping and nursery grounds).

5. Many of the habitats potentially affected by these activities have been identified as EFH-HAPCs by the SAFMC. Each habitat and FMP is provided as follows:

   a) all hardbottom areas (SAFMC snapper grouper);
   b) nearshore spawning and nursery sites (SAFMC penaeid shrimps and red drum);
   c) benthic Sargassum (SAFMC snapper grouper);
   d) from shore to the ends of the sandy shoals of Cape Lookout, Cape Fear, and Cape Hatteras, North Carolina; Hurl Rocks, South Carolina; and *Phragmatopoma* (worm reefs) reefs off the central coast of Florida and near shore hardbottom south of Cape Canaveral (SAFMC coastal migratory pelagics);
   e) Hurl Rocks (South Carolina); the *Phragmatopoma* (worm reefs) off central east coast of Florida; nearshore (0-4 meters; 0-12 feet) hardbottom off the east coast of Florida from Cape Canaveral to Broward County; offshore (5-30 meters; 15-90 feet) hardbottom off the east coast of Florida from Palm Beach County to Fowey Rocks; Biscayne Bay, Florida; Biscayne National Park, Florida; and the Florida Keys National Marine Sanctuary (SAFMC Coral, Coral Reefs and Live Hardbottom Habitat);
   f) EFH-HAPCs designated for HMS species (e.g., sharks) in the South Atlantic region (NMFS Highly Migratory Species);
   g) *Oculina* Bank HAPC and proposed deepwater coral HAPCs (SAFMC Coral, Coral Reefs and Live Hardbottom Habitat); and
   h) HAPCs for diadromous species adopted by the Atlantic States Marine Fisheries Commission (ASMFC).

6. Habitats likely to be affected by marine aquaculture activities include many recognized in state-level fishery management plans and interstate fishery management plans of the ASMFC. Examples of these habitats include state-designated Critical Habitat Areas (CHAs) or Strategic Habitat Areas (SHAs) established by the North Carolina Marine Fisheries Commission, either in FMPs or in Coastal Habitat Protection Plans. Many state-managed and interstate-managed species serve as key prey for SAFMC-managed species.

7. Scientists have documented exceptionally important habitat values for East coast Florida nearshore hardbottom used by over 500 species of fishes and invertebrates, including juveniles of many reef fishes. Equivalent scientific work is just beginning in other South Atlantic states, but life histories suggest that similar habitat use patterns will be found.
Threats to EFH from Marine Aquaculture Activities

Aquaculture-related development without adequate safeguards may threaten wild stocks and the habitats that support them. The future of some aquaculture sectors is inextricably intertwined with fisheries and the health of marine ecosystems. Some coastal forms of aquaculture are known to degrade marine ecosystems, and may result in a net loss of fish. Finfish netpens in offshore waters may pose risks similar to netpens in inshore waters, where several potential environmental issues have been documented (summarized in Naylor et al., 2000; and Nash, ed, 2005).

Experimental or small-scale commercial fish farms are unlikely to have major environmental effects. However, if marine aquaculture booms, and becomes a major means of food production, the potential impacts on marine ecosystems and wild fisheries – and the communities that depend upon them – could be significant. An analysis of the potential cumulative impacts of aquaculture development in the Southeast region is essential prior to any large-scale expansion, onshore or offshore.

The SAFMC finds the following to constitute potential threats to EFH:

1) Escapement: Ecological damage caused by escaped organisms has been documented, including the introduction of non-native species, and reduced fitness of wild stocks as a result of interbreeding with escapees of the same species. The likelihood of escapes from farms may be high, if cages are sited in storm-prone areas, either offshore or nearshore.

Moreover, species potentially targeted for offshore or nearshore production may spawn in netpens. Ocean fish cages are incapable of containing fish eggs. The impacts of fertilized egg releases on the health of wild fisheries could be significant if farmed fish are genetically less well adapted to the ocean environment, as a result of selective breeding, genetic engineering, or simply because animals being farmed were taken from a geographic area with different ecological conditions.

2) Spread of pathogens and use of antibiotics and other drugs: Concentration of large numbers of animals in a small area can facilitate outbreaks of disease and parasites, potentially jeopardizing wild stocks. Disease and parasite outbreaks can also lead producers to administer antibiotics and other drugs, usually via feed. Drugs can end up in marine ecosystems where they can select for resistant bacteria, sometimes in species targeted by fisheries (Ervik et al., 1994). Note that the U.S. Food and Drug Administration regulates the use of drugs in aquaculture and there are only a very few drugs approved for controlled and limited use.

3) Water pollution: Concentrated animal production operations use substantial amounts of feeds. Even very efficient operations may lose a portion of the nutrients in feeds through uneaten food and through oxygen-demanding wastes, which are transmitted to surrounding waters.


Nitrogen is the nutrient primarily responsible for eutrophication in marine waters in the U.S. southeast, resulting in algal blooms and deoxygenation. In inshore waters, both nitrogen and phosphorus are nutrients of concern.

Nutrient impacts can be considerable in oligotrophic oceanic systems at levels significantly below those used as benchmarks for pollution in inshore and estuarine waters. The importance of the surface microlayer to larval ecology and its vulnerability to perturbations from airborne or locally-sourced excess nutrients cannot be overstated. Standards and criteria for nutrient-related water quality impacts on these oceanic ecological functions do not yet exist, and compliance with state-based water quality standards and national water quality criteria for nutrients may not prevent loading-based impacts.

Fish farms may cluster geographically near infrastructure such as processing plants and transportation, like terrestrial hog farms, concentrating potential impacts. However, widely-spaced marine farms sited in areas with strong currents and strong mixing would have less localized impact.

Finally, other feed additives, including metals and persistent organic pollutants, may contribute to longer-term bioaccumulation.

**SAFMC Policies for Marine Aquaculture Projects**

The SAFMC establishes the following general policies related to marine aquaculture projects, to clarify and augment the general policies already adopted in the Habitat Plan and Comprehensive Habitat Amendment (SAFMC 1998a; SAFMC 1998b):

1. The Council strongly supports thorough public review and effective regulation of marine aquaculture activities in the South Atlantic EEZ. South Atlantic fisheries are exceptionally dependent upon healthy habitat already under attack from many sources.

2. Permits should be for at least a ten-year duration with annual reporting requirements (activity reports) and a five-year comprehensive operational review with the option for revocation at any time in the event there is no prolonged activity or there is documented adverse impacts to marine resources. Given the changes underway in coastal ecosystems in response to storm events, rising seas and introduced species, such a review cycle is essential.

3. Environmental review and performance expectation are paramount. This is a new and totally optional class of private uses being imposed on already at-risk ecosystems where unacceptable ecological cascades could occur. The Council is committed to ensuring that marine aquaculture activities are held to the same level of EFH conservation protections as are other non-fishing* activities.

*The reference to non-fishing activities is meant to clarify that the Council’s role is to comment on aquaculture activities similar to process the Council uses for non-fishing activities. The MSA currently defines aquaculture as a fishing activity. However, the proposed Aquaculture Bill would remove aquaculture as a fishing activity. The Council applies the same EFH standards to both fishing and non-fishing impacts.*
4. The Council approves of use of therapeutic agents and feed additives, that have been approved by the FDA specifically for use in offshore open-water or net pen aquaculture.

5. The use of genetically modified and non-native species should be prohibited.

6. Given the critical nature of proper siting, the applicant should provide all needed information to evaluate in full the suitability of potential sites. If sufficient information is not provided in the application review time allotted by existing processes, the permit should be denied or held in abeyance until required information is available.

7. Monitoring plans should be developed by the applicant/permit holder and approved by NOAA Fisheries with input from the Council. Monitoring plans should be reviewed, approved, and funded prior to implementation.

8. Permitees must have adequate resources legally committed to ensure proper decommissioning of obsolete or storm-damaged facilities.

9. The issuing agency should have clear authority to repeal or condition permits in order to prevent environmental damage and exercise its authority to repeal permits if it becomes evident that environmental damage is occurring or if permit conditions are not met.

References


Naylor, R., Burke, M. 2005. Aquaculture and ocean resources: Raising tigers of the sea. Annual Review of Environmental Resources 30:1.1.1.34


