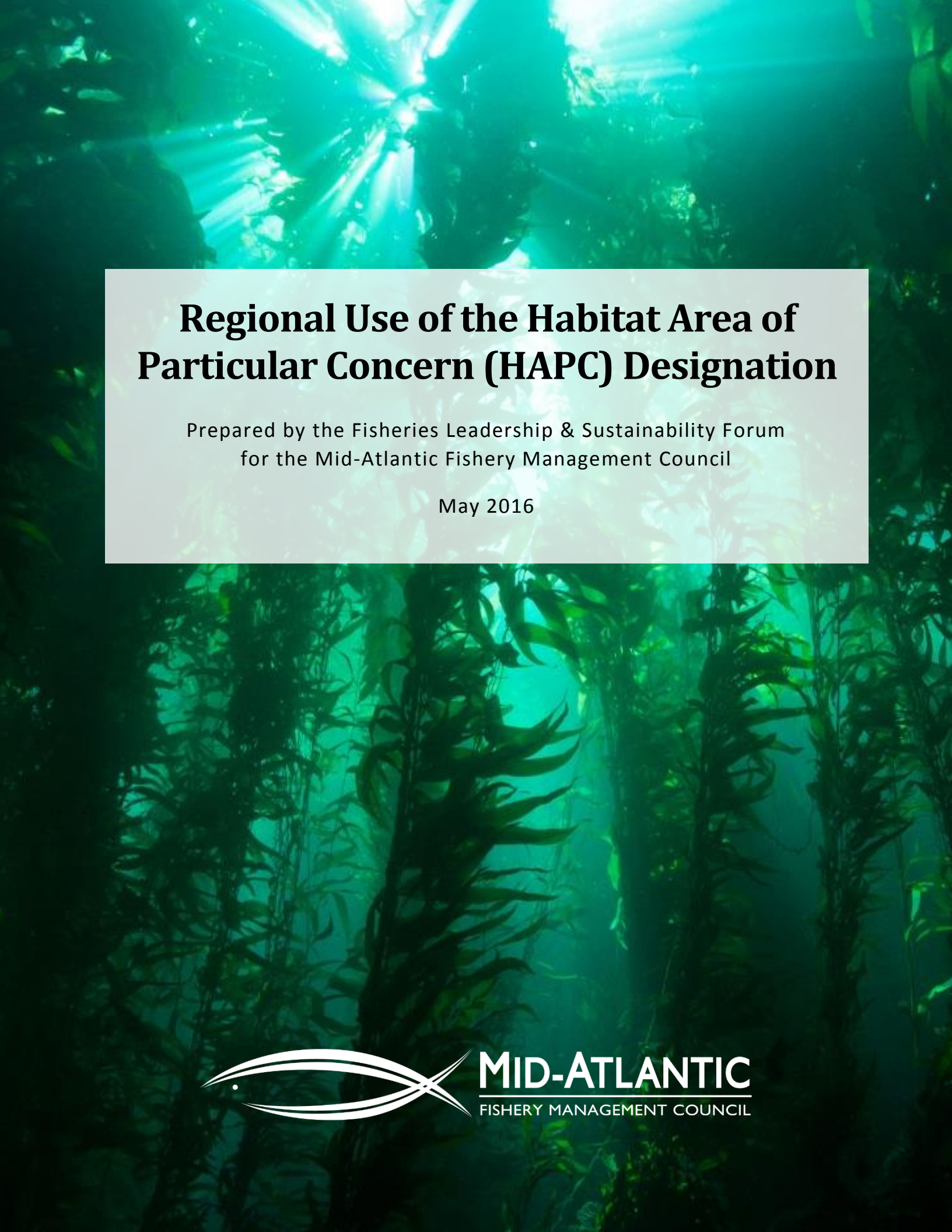

Regional Use of the Habitat Area of Particular Concern (HAPC) Designation

Prepared by the Fisheries Leadership & Sustainability Forum
for the Mid-Atlantic Fishery Management Council

May 2016

MID-ATLANTIC
FISHERY MANAGEMENT COUNCIL

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Acronyms

AP	Advisory Panel
CEBA	Comprehensive Ecosystem-Based Amendment (South Atlantic)
CHAPC	Coral Habitat Area of Particular Concern (Gulf of Mexico, South Atlantic)
COP	Council Operating Procedures
DEIS	Draft Environmental Impact Statement
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EFHRC	EFH Review Committee (Pacific)
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FEP	Fishery Ecosystem Plan
GRA	Gear Restricted Area
HAPC	Habitat Area of Particular Concern
HCD	Habitat Conservation Division
HMS	Highly Migratory Species
ICCAT	International Commission for the Conservation of Atlantic Tunas
MPA	Marine Protected Area
MSA	Magnuson-Stevens Act
NMS	National Marine Sanctuary
PDT	Plan Development Team
RCA	Rockfish Conservation Areas (Pacific)
RFP	Request for Proposals
SAFE	Stock Assessment and Fisheries Evaluation Report
SSC	Scientific and Statistical Committee
SAV	Submerged Aquatic Vegetation
USACE	United States Army Corps of Engineers
WPSAR	Western Pacific Stock Assessment Review

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Part I. Introduction and Regional Synthesis

1. Introduction

Habitat Areas of Particular Concern (HAPCs), a subset of Essential Fish Habitat (EFH), are habitat types and/or geographic areas identified by the eight regional fishery management councils and NOAA Fisheries as priorities for habitat conservation, management, and research. The HAPC designation is a versatile habitat conservation tool that has been applied in a variety of ways and for diverse purposes across management regions.

This report summarizes the approaches of the eight regional fishery management councils and NOAA Fisheries Highly Migratory Species Management Division to designating HAPCs. Part I provides a synthesis of regional similarities and differences, as well as questions, insights, and lessons learned over nearly two decades of experience. Part II includes nine short profiles describing the process, purpose, and rationale for each region's approach to designating HAPCs, and regional factors that influenced the approaches used.

Healthy Seagrass.
Photo Credit: Paige Gill.

This report was developed to support the Mid-Atlantic Fishery Management Council's consideration of HAPCs as a strategy for supporting effective habitat conservation and ecosystem resilience in the Mid-Atlantic region. The regional profiles and synthesis are intended to serve as a resource for the broader federal fisheries management community, and were developed with extensive input and feedback from council and NOAA Fisheries staff.

Background

The 1996 reauthorization of the Magnuson-Stevens Act (MSA) recognized the loss of marine and estuarine habitat as a long-term threat to the viability of U.S. fisheries, and emphasized habitat conservation as an important component to conservation and management. The MSA defines EFH as "waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity" (16 U.S.C. 1802 § 3(10)). Fishery management plans (FMPs) must describe and identify EFH, minimize adverse impacts from fishing to the extent practicable, and identify actions to encourage habitat conservation and enhancement.

The HAPC designation is described in the implementing regulations of the EFH provisions (50 CFR § 600.815). Councils are encouraged to identify habitat types or areas within EFH as HAPCs, 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
(IV) The rarity of the habitat type

The HAPC designation does not confer any specific habitat protections, but can focus habitat conservation efforts through several pathways. Councils may take HAPCs into consideration when minimizing adverse impacts from fishing, for example, through restrictions on where and when fishing activity may occur. HAPCs also enable councils and NOAA Fisheries to communicate habitat conservation priorities to non-fishing ocean users. While NOAA Fisheries and the councils lack the authority to regulate non-fishing activities, Federal agencies must consult with NOAA Fisheries when authorizing, funding, or undertaking activities that may adversely impact EFH (16 U.S.C. 1855 §305(b)(2)). Within the EFH consultation process, HAPCs encourage increased scrutiny and more rigorous conservation recommendations for reducing adverse impacts to fish habitat. Finally, HAPCs can serve as a tool for focusing habitat research and monitoring efforts.

Regional HAPC designations

Nearly twenty years have passed since the EFH provisions were adopted through the reauthorized MSA. During that time, councils have taken diverse approaches to designating HAPCs. The following synthesis and regional profiles illustrate this diversity, focusing on:

- The timing, frequency, process, and roles and responsibilities involved in designating HAPCs;
- The purposes for designating HAPCs, the size, extent, and location of the habitat areas and/or types identified, and regional interpretations of the four HAPC considerations;
- The role of HAPCs in the EFH consultation process; and
- Perspectives on effective use of the HAPC designation, including the role of councils in supporting habitat conservation, the evolution of HAPC as a policy tool, and advances in habitat science.

Clarifications

The following notes are included to clarify frequently asked questions and regional differences.

- The 2000 lawsuit, *American Oceans Campaign v. Daley*, determined that there was inadequate environmental analysis of fishery management plan amendments implementing the EFH provisions of the 1996 MSA in five of the eight council regions (Gulf of Mexico, New England, Caribbean, Pacific, and North Pacific). (The South Atlantic, Mid-Atlantic, and Western Pacific Councils had not yet completed their analyses of habitat impacts from fishing, and were not included in the lawsuit.) Each region was required to prepare a new Environmental Assessment or Environmental Impact Statement for their EFH amendment. In some regions this requirement resulted in an EIS completed several years later than a plan amendment. In the process of completing the required EIS, some regions also made changes to HAPCs that were subsequently adopted through new plan amendments.
- Two councils, the Gulf of Mexico and South Atlantic, identified “Habitat Areas of Particular Concern” under a joint Coral FMP that pre-dates the 1996 reauthorization of the MSA and adoption of the EFH provisions. Additional explanation is provided in these two profiles. In the South Atlantic profile the term “EFH-HAPC” is used to indicate HAPCs identified pursuant to MSA habitat authorities.
- The term “HAPC” is considered singular where it applies to a habitat type, a single location, or a set of locations considered a single HAPC designation. The term HAPCs is used in the plural to refer to multiple HAPCs as habitat types or locations, and to refer to the designation as described in the implementing regulations of the EFH provisions (50 CFR 600.815).

2. Procedural Similarities and Differences

Since the EFH provisions were first introduced through the 1996 reauthorization of the MSA, councils have adopted different processes and timelines to bring their FMPs into compliance. Regional use of the HAPC designation has evolved alongside these processes, resulting in procedural differences between regions. Many councils emphasize the importance of having a clearly defined process for designating HAPCs, and that this process may evolve over time.

Timing and frequency

HAPCs are nearly always identified as part of the EFH identification and review process. All eight councils completed an initial round of amendments in the late 1990s to bring their FMPs into compliance with the 1996 MSA. Since that point, the number, frequency, and timing of EFH reviews and actions has varied by region. The implementing regulations of the EFH provisions state that a complete review of all EFH information should be conducted as recommended by the Secretary, but at least once every five years (50 CFR 600.815 (a)(10)). The EFH review process and amendment process, if the council determines that action is needed, can involve a lengthy timeline. As a result the actual time elapsed between EFH reviews is often longer than five years. Several councils have completed multiple rounds of EFH reviews, though in some cases these reviews have not resulted in FMP amendments or changes to HAPCs. Other councils are still in the process of completing their first EFH reviews for one or more FMPs.

Amendment process

As a subset of EFH, HAPCs are specific to managed species or species complexes, and are designated through amendments to one or more FMPs. Most councils initially completed a single amendment (termed an omnibus, generic, or comprehensive amendment) to comply with the EFH provisions of the 1996 MSA. Some councils have continued to conduct EFH reviews and update FMPs on a comprehensive basis while others now take an FMP-specific approach.

Roles and responsibilities

The division of habitat conservation roles and responsibilities among council and NOAA Fisheries staff varies by region. The composition and role of advisory bodies, plan teams, technical teams, academics, and outside experts, contractors, and other groups also varies. These differences reflect regional processes for compiling and synthesizing habitat information, conducting EFH reviews, designating HAPCs, and communicating about habitat conservation issues.

Information inputs

The information inputs used to designate and describe HAPCs vary by region. These differences may reflect a region's EFH review and/or HAPC designation process, the information that is available, and the time and resources that council and NOAA Fisheries staff are able to devote. Inputs may include a wide variety of internal and external data sources, published literature, expert opinion, industry and public input, and in a few instances targeted research.

Public participation

Several councils provide formal opportunities for the public, including NOAA Fisheries, to participate in the designation of HAPCs via a nomination or proposal process. These processes increase the range of information sources, expertise, and perspectives involved in identifying HAPCs, and may also enhance

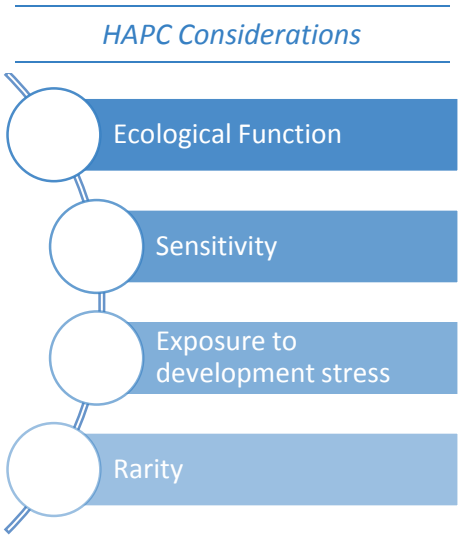
transparency and stakeholder buy-in. Developing and refining these opportunities for public participation has been a learning process. Councils have considered the timing of proposal cycles, the consistency and quality of information inputs, and processes for evaluating the merits of different proposals.

Monitoring

Long-term monitoring of HAPCs is challenging due to resource limitations, the extent, number, and/or location of HAPCs, and especially the absence of specific and measurable HAPC objectives. There are no examples of long-term monitoring of HAPCs relative to specific goals and objectives. There are limited examples of research conducted to assess impacts and damage to HAPCs over time, and to characterize community composition within HAPCs.

3. Identifying HAPCs: Decisions and Design Considerations

Councils have considerable flexibility to designate HAPCs. Designating HAPCs requires a council to construct a scientifically based statement about the value of a habitat area or type, and how it may be impacted by fishing and non-fishing activities. The four HAPC considerations of ecological function, sensitivity, exposure to development stress, and rarity provide a framework for articulating this statement of value in consistent terms. However, designating HAPCs is not necessarily a process of determining the habitat areas or types that are most important to a fishery or region. Each management region's use of the HAPC designation also reflects regional context, priorities, concerns, and perspectives on the effective and appropriate use of HAPCs as a tool for habitat conservation.



Level of HAPC designation

HAPCs are usually designated for a specific fishery or species complex and FMP, though this depends on a region's approach to reviewing and designating EFH and HAPCs. In regions that address EFH and HAPC on a fishery by fishery basis, HAPCs are clearly identified within the context of a single fishery and FMP. In regions that perform comprehensive EFH reviews and amendments, HAPCs may or may not be as clearly affiliated with specific fisheries and FMPs. For example, in the South Atlantic, habitat types and sites may be designated separately as HAPC for multiple species complexes. In New England, proposed HAPCs[1] are described in terms of their value to managed fisheries and their overlap with EFH, but are not necessarily identified as HAPC for a specific fishery.

There are fewer examples of HAPCs identified for individual species and/or purposes. Some councils manage species specific FMPs (e.g., Mid-Atlantic golden tilefish), which may result in the designation of species-specific HAPCs. In other cases, HAPCs may be targeted toward a species of high importance due to economic value, stock status, or research needs. Finally, a council may utilize species-specific habitat information, such as confirmed spawning activity, to justify the value of a HAPC to multiple species.

Regional Examples

The **South Atlantic Council** designated habitat types (e.g., pelagic *Sargassum*) and discrete sites (e.g., areas of hard bottom such as the Big Rock and the Charleston Bump) as HAPC for multiple species complexes.

The **New England Council** prioritized designating HAPCs that include juvenile cod EFH.

The **Caribbean Council** designated reef fish spawning site HAPCs for the Reef Fish FMP, based on confirmed spawning activity by individual species (e.g. red hind).

[1] Omnibus Habitat Amendment 2 (NEFMC 2016).

Definition and application of HAPC considerations

Councils take similar approaches to defining and interpreting the four HAPC considerations of ecological function, sensitivity, exposure to development stress, and rarity, drawing from ecological theory, peer-reviewed literature, and other information sources. Most councils provide a qualitative description of which considerations a HAPC meets, and why. The level of detail included in these descriptions varies, depending on the amount of information available. Sometimes there is an explicit statement of which of the four considerations are met, or this information may be organized into a table. In other cases the four HAPC considerations may be addressed implicitly, for example through a description of a HAPC's ecological importance. The four HAPC considerations are most often used to frame statements about the value of a habitat type or area, rather than to rank or compare potential or existing HAPCs.

Of the four HAPC considerations, ecological importance is the most frequently invoked. While ecological importance is not explicitly stated as the basis for identifying every single HAPC, it is usually implicit. The considerations of sensitivity and exposure to development stress are related. Together they describe the susceptibility of a habitat area or type to impacts from anthropogenic activities, and the time horizon and likelihood of impacts. For example, each region that contains coral/hardbottom habitat recognizes this habitat type as sensitive to degradation. Whether areas of coral/hardbottom habitat are currently or likely to be stressed by development depends on where the habitat is located, and current and potential development activities occurring in the region.

The fourth HAPC consideration of rarity is prioritized differently across regions, and can be difficult to define. One reason is that rarity depends on scale, and what is considered rare at a small scale (e.g. a patch of SAV or coral habitat) may not be considered rare at a larger scale. The geography and size of a management region influence the interpretation of rarity as well. Rarity can also be a function of past and current exposure to anthropogenic activity. For example, submerged aquatic vegetation is recognized as important habitat in several regions, but may be less abundant and therefore rarer in areas more heavily impacted by coastal development. Finally, rarity is not necessarily an indication of ecological importance.

Regional Examples

The **North Pacific Council** ranks proposed HAPCs on a scale of zero to three for each HAPC consideration, and combines these scores with a data certainty factor to screen proposals for further consideration by the Council. All HAPCs must meet the "rarity" consideration. For a potential HAPC to rank high (scored a 3) for rarity, it must occur in discrete areas within a single Alaska region (Gulf of Alaska, Bering Sea, Aleutian Islands, and Arctic).

The **North Pacific** and **New England Councils** developed additional considerations and priorities that HAPCs must meet, in order to help further focus the HAPC identification process.

The **New England Council** is proposing an extensive inshore HAPC for juvenile cod, defined as a depth contour 0-20m, due to the sensitivity and exposure of nearshore areas to a wide range of anthropogenic stressors.

The **Western Pacific Council** determined that justification of ecological importance should be considered the primary criteria for screening potential HAPCs, and that sensitivity, susceptibility, and rarity should be considered secondary considerations that can strengthen the HAPC designation.

Habitat types and sites as HAPCs

NOAA Fisheries has encouraged shifting from designating habitat types as HAPCs towards identifying discrete, geographically defined sites. While some councils designate site-specific HAPCs, others continue to identify a combination of types and sites. There are different perspectives on whether a HAPC must be a defined location, in order to serve as a meaningful habitat conservation tool for addressing fishing or non-fishing impacts. Regions that primarily or exclusively designate discrete sites as HAPCs include the North Pacific, New England, Gulf of Mexico, and the Caribbean. The NOAA Fisheries Highly Migratory Species Management Division also identifies discrete sites as HAPCs. Regions that continue to designate both habitat types and sites as HAPCs include the South Atlantic, Pacific, Mid-Atlantic, and Western Pacific.

A region may designate habitat types as HAPCs due to information limitations. Designating habitat types as HAPCs can also be a deliberate and strategic statement that this habitat is important, wherever it is found. Some important habitat types are dynamic, and vary in location and extent over time. Examples include living habitat types such as seagrass or SAV, and habitat types defined by chemical or physical parameters such as temperature and salinity. While the approximate location of these dynamic habitat types can be mapped, tracking their location over time is often not feasible due to resource limitations. Designating habitat types as HAPCs can shift the burden of proof to consulting agencies in the EFH consultation process, by requiring these agencies determine whether a habitat type is found in an area and thus may be adversely affected by a proposed development activity.

There can be overlap among habitat types and sites designated as HAPCs within a region. For example, habitat types and locations may be designated as HAPC in conjunction to better approximate the location of an important habitat type, or ensure that a habitat type is acknowledged throughout an area where it occurs. A habitat type such as SAV may also occur within another habitat type, such as estuaries, or within a discrete location identified as HAPC. It is not clear whether this overlap strengthens the HAPC designation.

Regional Examples

- The **North Pacific Council's** HAPC proposal process, and the Pacific's EFH/HAPC Request for Proposals, specify that HAPCs must include geographic coordinates.
- The **Pacific Council** exclusively identified habitat types rather than sites as HAPCs for salmon, including dynamic features such as thermal refugia.
- The **South Atlantic Council** identified coral and hardbottom habitat types as HAPCs, and also identified discrete areas where these habitat types are known to occur.

Location of HAPCs

Some regions primarily designate HAPCs in state and/or territorial or Commonwealth waters, while other regions designate HAPCs offshore in federal waters. This distinction reflects different perspectives on the most effective use of the HAPC designation: addressing fishing impacts in federal waters, which councils can regulate, or addressing non-fishing impacts outside of council authority. EFH for most species encompasses both state and federal waters, but the majority of development activities requiring EFH consultations occur in state waters. Where HAPCs are located inshore, their utility as a habitat conservation tool is primarily to address non-fishing impacts through the EFH consultation process. Where

HAPCs are located offshore in federal waters, they may intersect with non-fishing activities but more often address current or potential habitat impacts from fishing.

Designating HAPCs in state waters may also reflect other factors including the life history of managed species, the availability of information to document habitat importance, physical features like bathymetry, the types of fishing gear used in a region, and the overlay of HAPCs with sites recognized under other authorities (e.g., National Marine Sanctuaries). The North Pacific and Gulf of Mexico regions designate HAPCs primarily in federal waters, while other regions also designate HAPCs in state waters.

Regional Examples

- In the **Gulf of Mexico**, all HAPCs are located in federal waters.
- Nearly all **Caribbean** HAPCs are located in state waters, and may include inland habitat (e.g., state forests).
- HAPCs for anadromous salmon species in **New England** and the **Pacific** region include inland freshwater habitat.

HAPCs and fishing restrictions

HAPCs are an administrative designation that do not imply or confer any restrictions on fishing activity. In practice, HAPCs may overlap or be associated with a wide range of habitat protection measures including seasonal or year-round closures, gear restrictions, and prohibitions on anchoring. These measures are most often implemented to minimize adverse impacts of fishing, but in some cases are adopted for other purposes and through separate council actions.

The relationship between HAPCs and restrictions on fishing activity is complicated and challenging to communicate. Stakeholders may conflate HAPCs with closures, and with other designations like Marine Protected Areas (MPAs). Many councils make a deliberate effort to communicate that HAPC designations do not directly translate to restrictions on fishing, and that HAPCs are designated for purposes such as addressing non-fishing impacts and focusing research priorities. This misperception may change as stakeholders become more familiar with the process and outcomes of designating HAPCs.

Regional Examples

- The **North Pacific Council** identified areas of skate egg concentrations as HAPCs but did not adopt any gear restrictions for these areas. The Council requested that these sites be monitored and information be included in the Ecosystem chapter of the Council's Stock Assessment and Fisheries Evaluation (SAFE) report.
- In the **Mid-Atlantic** region, HAPC for golden tilefish corresponds to gear restricted areas (GRAs) closed to bottom trawling.
- The **Caribbean Council** designated reef fish spawning site HAPCs that were already subject to seasonal spawning closures.

Overlap of HAPCs with other designations

Many HAPCs correspond with areas protected under other designations and authorities, such as National Marine Sanctuaries, Marine Reserves, and State and National parks. Sometimes this overlap is intentional, and a council may choose to designate sites as HAPCs because they are already recognized for their ecological value. In other cases, part or all of these sites may be designated as a HAPC with more specific regard to the four HAPC considerations. The objectives and purpose for recognizing sites of ecological value under other authorities may be complementary to fishery management objectives, but are still different. One concern is that overlap between HAPCs and other designations may perpetuate the tendency to equate HAPCs with protected area designations that are often associated with fishing restrictions.

HAPCs and deep sea corals

A small number of councils have designated deep sea corals as HAPCs. The HAPC designation pre-dates the deep sea coral discretionary authority, which was introduced in the 2006 reauthorization of the MSA (16 U.S.C. 1853 § 303 (b)(2)). Some regions continue to use the HAPC designation to recognize deep sea corals, while others are currently considering whether to use the HAPC designation or deep sea coral discretionary authority.

4. HAPC and EFH Consultations

The HAPC designation can be a mechanism for councils to communicate their habitat conservation priorities beyond the scope of councils' jurisdiction and regulatory authority. Under the EFH provisions of the MSA, a federal agency authorizing, funding, or undertaking an activity that may adversely impact EFH must consult with NOAA Fisheries. HAPCs may be directly leveraged in the consultation process and support a more focused examination of non-fishing impacts to important fish habitat.

EFH consultation process

Through the EFH consultation process, the consulting agency (termed the action agency) authorizing, funding, or undertaking an activity that may adversely impact EFH is responsible for notifying NOAA Fisheries and assessing the activity's potential impacts to EFH (16 U.S.C. 1855 §305(b)(2)). NOAA Fisheries determines whether a consultation is required, and if so, responds with any necessary conservation recommendations for the action agency to avoid, minimize, mitigate, or offset adverse impacts to EFH. The action agency must provide a detailed written response to NOAA Fisheries, including an explanation for any conservation recommendations that are not adopted.

Flatfish in Seagrass.
Source: NOAA Fisheries.

NOAA Fisheries Habitat Conservation Division (HCD) staff are responsible for overseeing the agency's role in the EFH consultation process.[2] Across council regions, the majority of consultations are with the U.S. Army Corps of Engineers (USACE) for development activities occurring in the nearshore zone (e.g., inlet dredging). Consultations for activities in federal waters (e.g., consultations with the Bureau of Ocean and Energy Management for offshore wind energy development) are less frequent and tend to involve larger-scale projects. While the consultation process is based upon a formal framework, timeline, and division of responsibilities, NOAA Fisheries HCD staff are able to engage in an iterative dialogue and information-sharing process with the action agency.

Role of HAPCs in EFH consultations

The presence of HAPCs may influence the process as well as the outcomes of EFH consultations. Given the high volume of EFH consultations annually, NOAA Fisheries HCD staff may optimize limited staff time and resources by prioritizing consultations that involve adverse impacts to HAPCs. Staff may also engage in a more rigorous consultation process, and provide the action agency with more stringent conservation recommendations. Some regions have deliberately designated (or are considering designating) HAPCs specifically for the value they bring to the EFH consultation process. For example, a council may designate HAPCs in nearshore areas that are likely to be impacted by development.

[2] In the NOAA Fisheries West Coast Region, staff within the four Area Offices oversee the agency's role in the EFH consultation process and are hereafter included in reference to HCD staff.

There are different regional perspectives on whether HAPCs are an effective mechanism for councils to address the habitat impacts of non-fishing activities, and whether the HAPC designation influences the prioritization and outcome of EFH consultations. The role of HAPCs in the EFH consultation process can depend on the following factors.

Documenting and communicating value

Designating a habitat type or site as a HAPC can be a meaningful statement in its own right, and enable councils to communicate their habitat conservation priorities in specific terms. However, this is only a starting point. Through the EFH consultation process, NOAA Fisheries HCD staff must construct a strong and scientifically founded statement about the value of habitat to managed stocks, and describe how this habitat would be adversely impacted by the proposed activity. The treatment of HAPCs in the EFH consultation process may be influenced by how clearly their value to a managed species can be articulated and documented in FMPs, peer-reviewed literature and other sources.

Regional context

There are different perspectives on whether HAPCs support prioritization of EFH consultations, and whether consultations involving HAPCs result in more stringent conservation recommendations. The extent to which HAPCs are invoked in EFH consultations depends on the overlay of several regional factors:

- The types, location, distribution, and intensity of development activities;
- The life histories and distribution of managed species, and whether EFH/HAPC is identified in nearshore and estuarine habitat; and
- Whether HAPCs are located in areas impacted by non-fishing activities.

In some regions such as the South Atlantic, where there are extensive HAPCs in nearshore waters as well as considerable coastal development, information about HAPCs is frequently drawn into the EFH consultation process. By contrast, in regions like the Gulf of Mexico or North Pacific, HAPCs are primarily offshore and less frequently overlap with EFH consultations. In the case of Pacific salmon species listed under the Endangered Species Act (ESA), the habitat types designated as HAPCs are frequently impacted by development activities, but the critical habitat designation under the ESA authority carries more weight.

Adoption of conservation recommendations

It is difficult to determine whether EFH consultations involving HAPCs result in more favorable outcomes, in terms of adverse impacts avoided. The habitat conservation recommendations generated by NOAA Fisheries are non-binding and not enforceable. Due to the high volume of EFH consultations, limited time and resources, and lack of monitoring by action agencies, NOAA Fisheries cannot track whether and to what extent conservation recommendations are followed over time.

Council involvement

Councils may comment and make recommendations to state and Federal agencies regarding projects that, in the council's view, may impact EFH and/or HAPC (16 U.S.C. 1855 §305 (b)(3)). In theory these comments could reinforce and add weight to NOAA Fisheries' conservation recommendations. As with NOAA Fisheries' conservation recommendations, it is difficult to demonstrate how council recommendations translate to outcomes. Direct council involvement in EFH consultations is limited. Councils may stay

apprised of large development projects and EFH consultations through formal processes, such as updates at a council meeting, as well as through informal and ongoing communication between council and NOAA Fisheries staff.

Education and relationship building

The EFH consultation process involves ongoing communication between action agencies and NOAA Fisheries HCD staff. HAPCs can help focus these discussions and serve as an educational tool. Whether the action agency is a frequent participant in EFH consultation process (e.g., USACE) or is less familiar with the consultation process, HAPCs can frame discussions about the habitat impacts of an activity in more specific terms. An understanding of EFH and HAPC and how both may be impacted by development activities can also enable action agencies to take proactive measures to minimize impacts prior to the consultation phase of a project.

5. Looking Ahead: Perspectives on Effective Use of the HAPC Designation

HAPCs and the council role in habitat conservation

The most significant challenge to habitat conservation is demonstrating effectiveness in terms of maintaining or enhancing fishery productivity. Regional use of the HAPC designation can reflect very different perspectives on the role of councils in supporting habitat conservation, and the outcomes that can be achieved by leveraging existing habitat authorities. The HAPC designation may be leveraged in the EFH consultation process, but whether consultations involving HAPCs lead to more favorable habitat conservation outcomes is unclear. It is also not possible to demonstrate that designating HAPCs translates to population level benefits for fish stocks.

What constitutes "effective" use of the HAPC designation depends on a council's expectations and rationale for designating HAPCs. While successful habitat conservation is challenging to demonstrate, councils have several opportunities to optimize the value of HAPCs as a habitat conservation tool.

- Councils can identify a clear purpose and objectives for designating HAPCs. What matters is not just "what is a HAPC" and the scientific basis for why, but how habitat conservation is linked to specific fishery management objectives.
- Councils can take a more comprehensive approach to designating HAPCs, by considering the intersections between managed fisheries, their habitat requirements, and current and potential fishing and non-fishing activities.
- Councils can leverage the HAPC designation process and outcomes as an educational tool and process for communicating with fishery stakeholders and other ocean users about the value of habitat to federally managed fisheries.

HAPC as a policy tool

Since the 1996 reauthorization of the MSA, councils have overseen multiple rounds of EFH reviews and HAPC designation processes. Through these iterations, councils have gained experience and also identified questions and considerations that will shape use of the HAPC designation in the future.

Ideal size and number of HAPCs: Where HAPCs are used as a tool for communicating habitat priorities, more and/or larger HAPCs can make a strong statement about the value of a habitat type or area. Within the EFH consultation process, more and/or larger HAPCs could also provide more flexibility for NOAA Fisheries to leverage the HAPC designation on a case by case basis, depending on the proposed activity and potential impacts. However, the value of the HAPC designation as a habitat conservation tool derives from its narrower focus. More selective use of HAPCs may preserve that value. More widespread use of HAPCs may also increase management complexity, particularly if they are associated with restrictions on fishing activity.

Time horizons: A related consideration is whether HAPCs are a long-term or permanent designation, or should change in response to new information and priorities. From a long term perspective, the scientific basis for HAPC designations can be strengthened over time with additional information. However, councils are also identifying HAPCs that take into consideration current priorities, concerns, and information needs, which may change over time. The four HAPC considerations of ecological function, sensitivity,

exposure to development stress, and rarity, allow for HAPC to reflect the long-term value of habitat areas and types, as well as changing concerns and development pressures.

Growth of development activities: The scale and diversity of development activities are growing in most regions, and increasing the potential for adverse impacts to important fish habitat. There can be significant growth of development activities between EFH reviews, particularly when development of council actions causes the timeline for EFH reviews to extend beyond five years. These changes reinforce the value of HAPCs as a tool for communicating habitat conservation priorities beyond the fisheries realm, as well as the importance of looking ahead to emerging ocean and coastal uses.

Implications of evolving habitat science and environmental change

As a tool for habitat conservation, HAPCs are grounded in habitat science. The value of the HAPC designation—whether to focus research, address fishing impacts, or communicate habitat conservation priorities—derives from the amount and the quality of information linking habitat with managed fisheries. As habitat and ecosystem science evolve, councils will continue to consider whether HAPCs are best used to recognize inherent habitat value, or whether HAPCs should be outcome oriented.

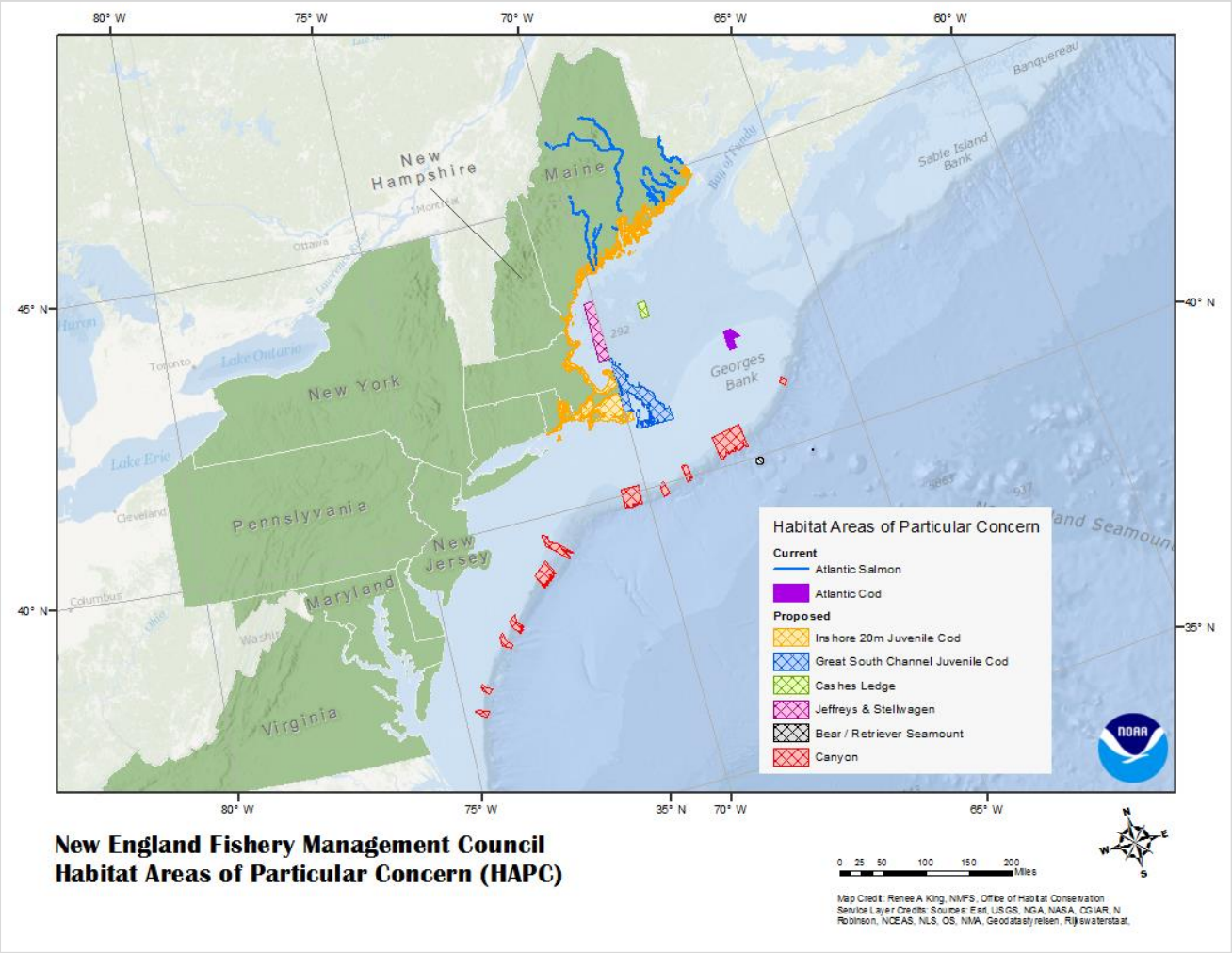
Broadening the definition of habitat: Councils are exploring the HAPC designation to recognize a wider range of habitat attributes. Habitat is defined in terms of the biological, chemical, and physical parameters of the water column and substrate. By definition, EFH recognizes habitat needed for immediate survival and to support life processes including reproduction and foraging. There are already examples of HAPCs tied to salinity and temperature profiles. As habitat science continues to advance, so will the question of whether HAPC is the appropriate tool to recognize attributes and forms of habitat such as artificial structures, oceanographic features such as currents and upwellings, and dynamic conditions, and if so, what purpose the HAPC designation would serve.

Connecting habitat conservation with fishery productivity: The connection between habitat conservation and fishery productivity is a challenge but also a developing opportunity for the use of HAPCs. The basis for designating HAPCs can range from simple presence/absence of a species, to more complex associations with habitat characteristics such as substrate type, depth, and temperature. Critical life processes and life stages may be highly correlated with a particular area or habitat type, yet the habitat characteristics defining this association may not be well understood. Future advances in habitat science should improve the ability to frame habitat conservation in terms of enhanced fishery productivity and conversely, habitat loss or degradation in terms of lost productivity.

Responding to climate change: Climate change introduces additional complexity by altering properties of the marine environment, and impacting fishery productivity and distribution. Even as the understanding of habitat and fishery productivity develops, marine habitat itself is changing. These changes will raise the questions of whether HAPCs continue to serve their intended purpose, and how climate change could or should be reflected in a region's interpretation of the four HAPC considerations.

Part II. Regional Profiles

1. New England



Summary of current approach

The New England Fishery Management Council first identified one area as a Habitat Area of Particular Concern (HAPC) for juvenile cod, and another for Atlantic salmon, through an omnibus amendment in 1998. The Council is nearing the completion of a second omnibus habitat amendment (Omnibus Amendment 2) which will designate additional HAPCs. This amendment was first initiated in 2004 as an Essential Fish Habitat (EFH) 5-year review and evolved into a more comprehensive evaluation of spatial management approaches to habitat conservation.

The Council's preferred HAPC alternatives were identified through a public proposal process and approved for inclusion in Omnibus Amendment 2 in 2007. The proposed HAPCs include multi-purpose HAPCs, areas of juvenile cod EFH, and seamounts and canyons on the outer continental shelf. One HAPC is an extensive inshore area of juvenile cod EFH defined as a depth contour from 0-20 m, designated primarily to inform the EFH consultation process and focus attention on coastal and nearshore development activities. Although some HAPCs may overlap with area closures or gear restrictions, the Council clearly

communicates that the designation of HAPCs is a separate decision. The Council adopted all of these proposed HAPCs during final action on Omnibus Habitat Amendment 2 in 2015.

History and evolution

The Council first identified two spatially defined HAPCs through an omnibus amendment in 1998. The Northern Edge Cod HAPC covers approximately 187 nm^2 on the northeastern edge of Georges Bank. This area was identified as a HAPC for juvenile cod due to the important role of cobble and gravel substrate in supporting survival of post-settlement juvenile cod, as well as the vulnerability of this habitat to adverse impacts from mobile fishing gear. This HAPC was designated within the boundaries of an existing closure, Closed Area II, which has been closed since December 1994 to various gears capable of catching groundfish. Amendment 13 to the Northeast Multispecies Fishery Management Plan (2003) designated a habitat area closed to mobile bottom-tending gear, the Closed Area II Habitat Closure Area, which has the same boundaries as the HAPC. The Council also identified 11 rivers in Maine as a HAPC. The rivers systems included in this HAPC support the last remaining populations of Atlantic salmon and are susceptible to impacts from a wide range of anthropogenic activities.

As noted above, the Council took final action on Omnibus Habitat Amendment 2 in 2015, and NOAA Fisheries approval and rulemaking are pending. This amendment was initiated to comply with the EFH review requirement, and evolved to include a more comprehensive review of existing and potential spatial management measures, including existing groundfish closures and habitat closures. Two goals added later in the process were to enhance groundfish fishery productivity, and maximize societal net benefits from groundfish stocks while addressing current management needs. The timeline for developing this amendment was extended for several reasons, including the 2006 reauthorization of the Magnuson-Stevens Act (MSA) and introduction of the deep sea coral discretionary provision, as well as the Habitat Plan Development Team's (PDT) development of a model[3] to optimize the process of minimizing adverse impacts of fishing across gear types, fisheries, and areas.

The Council's final preferred alternatives for identifying HAPCs are the same alternatives that were reviewed and selected in 2007. Between 2004 and 2005, the Council solicited proposals for HAPCs from the public. Proposals were reviewed by the Council's EFH Technical Team (which later became the Habitat PDT) and Habitat Oversight Committee, following a HAPC designation and selection process described in a NEFMC Habitat Annual Review Report prepared in 2000 by Council staff (NEFMC 2000). The Council solicited HAPC proposals according to the following considerations (NEFMC 2014):

1) Improve fisheries management in the EEZ;
2) Include EFH designations for more than one Council-managed species in order to maximize the benefit of the designations;
3) Include juvenile cod EFH; and
4) Meet more than one of the EFH Final Rule HAPC criteria.

The Council approved 16 potential HAPCs for inclusion in the Draft Environmental Impact Statement (DEIS) for EFH Omnibus Amendment 2. While there may be overlap between these HAPCs and existing or

[3] Swept Area Seabed Impact Model (SASI). See Omnibus Habitat Amendment 2, Appendix D: The Swept Area Seabed Impact approach: a tool for analyzing the effects of fishing on Essential Fish Habitat. (NEFMC 2014).

potential closures and gear restrictions, the HAPC designation is intended to be an administrative designation to focus council attention and the consultation process, and will not directly confer any protective measures. The Council's final preferred alternatives include maintaining the existing Atlantic salmon and juvenile cod HAPCs, adding several HAPCs that overlap with juvenile cod EFH, and designating two seamounts and a number of canyons on the outer continental shelf. Three of the HAPCs in the Gulf of Maine and on Georges Bank would designate areas with a diversity of habitat types that provide EFH for a variety of managed species. In several cases the extent and/or depth of these proposed HAPCs is limited by the extent of EFH, which in the northeast region is based on fishery-independent surveys of distribution and abundance for each managed species.

Shelf HAPCs

In addition to the existing Northern Edge Juvenile Cod HAPC, the Council's final preferred alternative would designate an additional four continental shelf HAPCs that meet most or all of the Council's additional HAPC considerations as stated above. Each of these sites is also noted for its ecological importance, and meets two to three of the HAPC considerations. Two of these proposed HAPCs currently overlap with existing habitat and/or groundfish closures, although the extent of overlap will ultimately depend on the spatial management measures adopted through Omnibus Amendment 2.

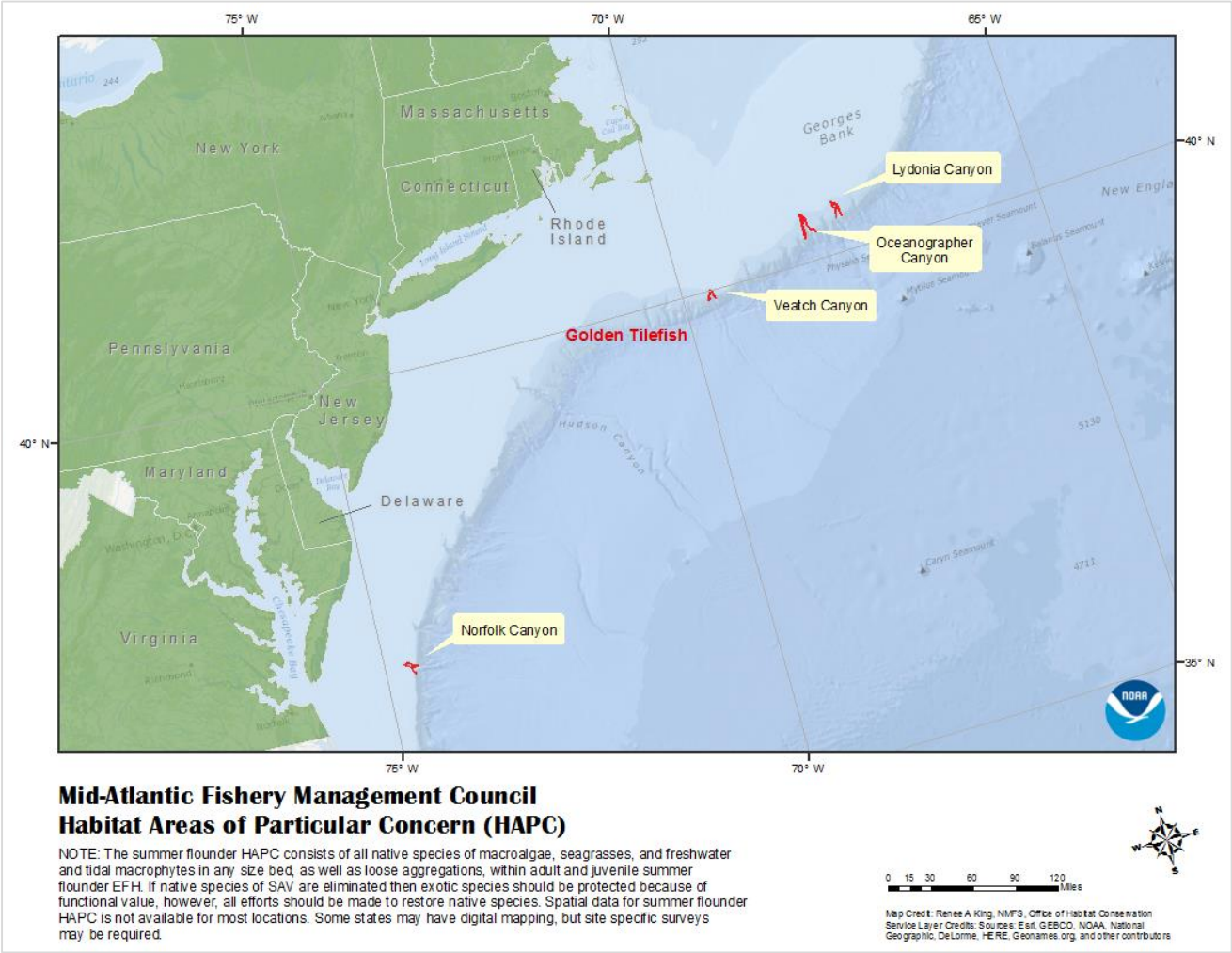
The proposed Inshore Juvenile Cod HAPC is notable for its spatial extent and deliberate focus on non-fishing activities. This HAPC was initially approved by the Council in 1999 for inclusion in a subsequent amendment. Defined as inshore areas in the Gulf of Maine and southern New England from 0-20 m depth, this represents a nearly continuous stretch of inshore waters from Maine to Rhode Island. This HAPC is ecologically important and was designated primarily due to the sensitivity and ongoing exposure of nearshore areas to a wide range of anthropogenic stressors posing chemical, physical, and biological threats.[4]

Canyons and seamounts

The Council's final alternatives for Omnibus Amendment 2 also include designating two seamounts and 16 offshore canyons as HAPCs. The proposed seamounts are noted for their ecological importance, sensitivity, and rarity, though are not anticipated to be exposed to any development stresses. They overlap with EFH for a single species, deep-sea red crab. The canyons proposed as HAPCs would be designated individually or together as a single HAPC. Each site meets all four HAPC considerations, including potential exposure to anthropogenic activities (e.g., transmission lines for energy resources). The extent of both seamount and canyon HAPCs is limited by depth to which EFH has been designated (2000 m for seamounts, and 1500 m for canyons). The Council is participating in a Memorandum of Understanding Regarding the Management of Deep Sea Corals, adopted to support coordination and information-sharing with the Mid-Atlantic and South Atlantic Fishery Management Councils. Whether the Council retains seamounts and canyons as HAPCs in its final preferred alternatives, and/or utilizes the MSA deep sea coral discretionary provision, remains to be determined.

[4] The sources and impacts of these stressors to Atlantic cod EFH by life history stage are described in Vol. 2 of Omnibus Habitat Amendment 2 (NEFMC 2016).

2. Mid-Atlantic



Summary of current approach

The Mid-Atlantic Fishery Management Council has made limited use of the Habitat Area of Particular Concern (HAPC) designation to date, in part due to limited information linking habitat to production (Montañez, pers. comm.). The Council identifies Essential Fish Habitat (EFH) and HAPCs on a Fishery Management Plan (FMP)-specific basis, and has identified HAPC for summer flounder and golden tilefish. Both HAPCs are described as habitat types rather than discrete areas, although the golden tilefish HAPC is a habitat type where it occurs within a defined area. The golden tilefish HAPC has corresponding gear restricted areas where bottom trawling is prohibited.

History and evolution

Summer flounder

The Council identified HAPC for summer flounder through Amendment 12 to the Summer Flounder, Scup, and Black Seabass FMP in 1998. HAPC is identified on the basis of its ecological importance for shelter and feeding, and is not mapped but defined in text as follows (MAFMC 1998):

> "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 submerged aquatic vegetation (SAV) are eliminated then exotic species should be protected because of functional value, however, all efforts should be made to restore native species."

As most summer flounder HAPC occurs in state waters there are no associated protections. However, the Council notes that designating SAV as HAPC may allow their recommendations to carry additional weight in the context of EFH consultations.

Golden tilefish

HAPC was first identified for golden tilefish in the original Golden Tilefish FMP, completed in 1999. At that time, golden tilefish were overfished and landings were concentrated in a small area. The Council designated HAPC as substrate between the 250 and 1200-foot isobaths in two statistical areas that accounted for approximately 90% of landings. While these areas were identified in terms of three of the four HAPC considerations (rarity, ecological function, and sensitivity) the Council's stated intent was essentially to classify these areas as HAPC because they represented areas of tilefish concentration. No habitat protections were associated with HAPC at the time, but the FMP clearly stated that these areas could be candidates for protection in the future given additional information about the impacts of mobile bottom gear.

Amendment 1 to the Golden Tilefish FMP, implemented in 2009, modified the description of EFH and defined a subset of areas in which HAPC is known to occur. The revised EFH description, informed by a literature review and expert analysis, identified EFH as semi-lithified clay substrates within a preferred temperature range, which generally correspond to a depth contour of 100 to 300m.[5] HAPC is further defined as clay outcrop/pueblo[6] habitats within four canyon areas (Norfolk, Veatch, Lydonia, and Oceanographer canyons), within the same depth contour identified as EFH. This habitat type is recognized for its ecological function as well as sensitivity to degradation. The council considered identifying additional canyon areas where clay outcroppings could occur, but chose to limit HAPC to the four canyons where it was documented to occur through submersible video surveys. Should the presence of clay outcroppings be confirmed in other canyons, these areas would be likely HAPC candidates in the future (Montañez, pers. comm.).

While golden tilefish HAPC does not directly confer any habitat protections, it is protected through an overlay of gear closures that generally correspond to the areas where HAPC may exist. Golden tilefish HAPC is a habitat type within geographically defined areas and a specified depth contour, although the precise location of the habitat types considered HAPC within these areas is not known. The clay outcropping/pueblo habitats identified as HAPC are highly vulnerable to bottom-tending mobile gear, including otter trawls. Amendment 1 establishes a series of gear restricted areas (GRAs) closed to bottom

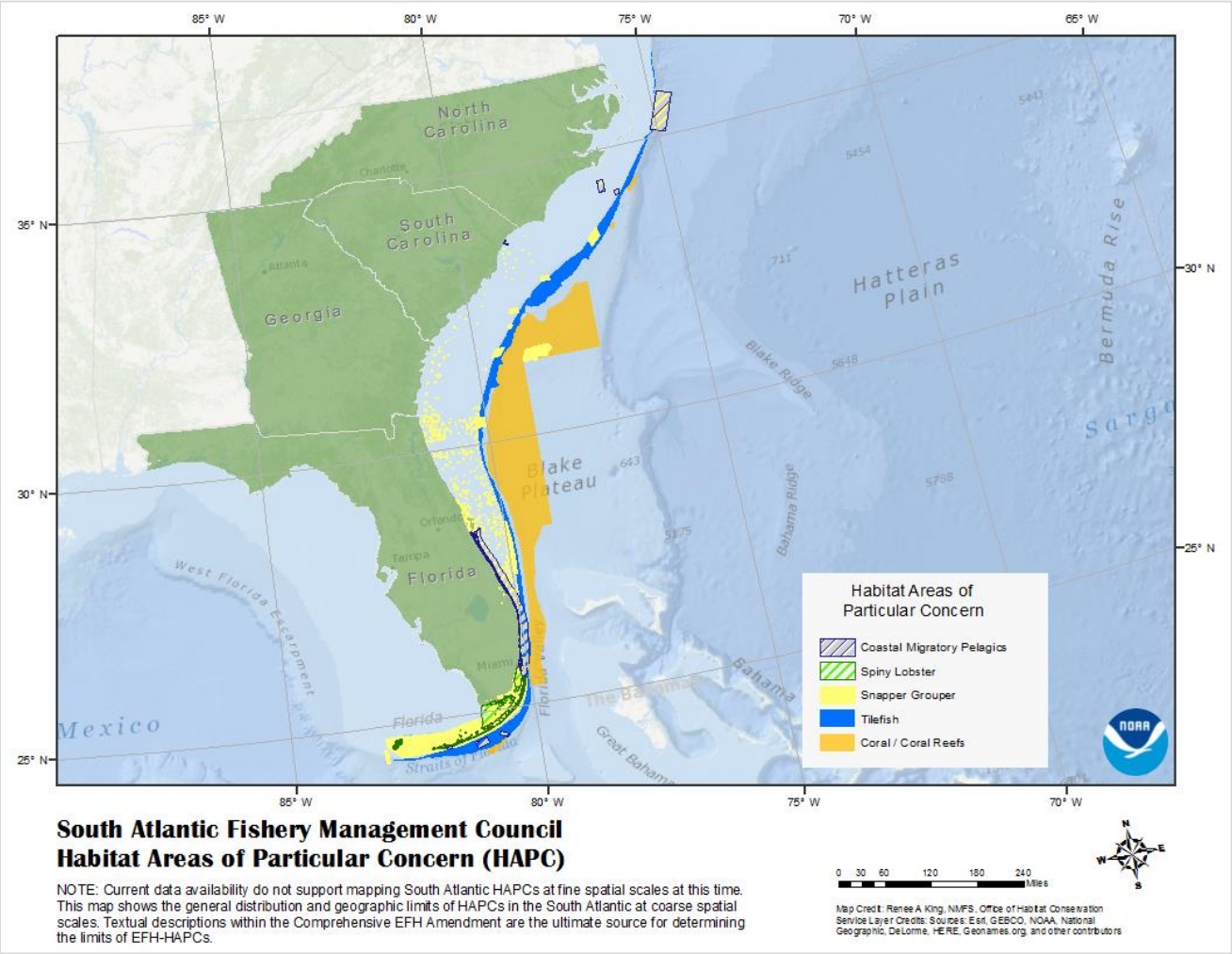
[5] Substrate type and temperature are stronger indicators of EFH than depth, however these parameters correspond to depth contours utilized for mapping purposes (Montañez, pers.comm.).

[6] Tilefish create vertical and horizontal burrows in clay substrate that are also referred to as "pueblo habitat" (MAFMC 2008).

trawling, within and adjacent to the four canyons where HAPC is known to occur. For enforcement purposes, the GRAs are defined by straight line boundaries rather than in terms of the depth contour used to define EFH and HAPC.

The Council has identified alternatives for protecting deep sea corals which are awaiting rulemaking, and developed of a Memorandum of Understanding Regarding the Management of Deep Sea Corals to support coordination and information sharing with the Mid-Atlantic and South Atlantic Fishery Management Councils. Whereas the South Atlantic and New England Councils have designated or are considering designating deep sea corals as HAPCs, the Mid-Atlantic is protecting these areas using the deep sea coral discretionary provision of the Magnuson-Stevens Act (MSA).

3. South Atlantic



Summary of current approach

The South Atlantic Fishery Management Council recognizes two different types of Habitat Areas of Particular Concern (HAPCs). The Council has two different pathways for identifying Coral Habitat Areas of Particular Concern (CHAPCs), and Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs), pursuant to the EFH provisions of the Magnuson-Stevens Act (MSA). The two designations serve different purposes. CHAPCs, a designation which pre-dates the EFH provisions of the MSA, directly eliminate or minimize the impact of fishing and fishing gear on coral, coral reefs, and live/hard bottom habitat. EFH-HAPCs are established to highlight the value of habitat to species or species complexes in the

Nassau grouper (Epinephelus striatus).
Source: NOAA CCMA Biogeography Team.

context of a specific fishery management plan (FMP), and address the impacts of non-fishing activities on those habitats and managed species during the EFH consultation process. Coral reefs and hard bottom habitat may therefore be recognized as CHAPCs in their own right, and also as EFH-HAPCs as habitat for other managed species. All CHAPCs are now also designated as EFH-HAPCs.

The majority of the region's EFH-HAPCs were initially identified via the Council's 1998 Habitat Plan and Comprehensive Amendment. Additional EFH-HAPCs were identified for corals and snapper-grouper species through recent Comprehensive Ecosystem-Based Amendments. Many habitat types and areas are identified as HAPC for multiple species and FMPs. The Council utilized both the CHAPCs and EFH-HAPC designations to protect deepwater coral ecosystems in the region.

History and evolution

The Council designated the first CHAPC, the Oculina Bank, under a joint South Atlantic and Gulf of Mexico Coral FMP implemented in 1984.[7] This use of the term "HAPC" pre-dates the EFH provisions of the MSA, and the four EFH considerations of ecological function, sensitivity, exposure to development stress, and rarity. The Coral FMP identified a separate set of four CHAPC considerations (SAFMC and GMFMC 1982)[8]

- Ecological value (e.g. outstanding examples of a species, rare species, unusual or unique biological relationships or ecological conditions)
- Research (history of study or areas of research interest)
- Exploitation (economically important or susceptible to anthropogenic activities)
- Recreation (high use or high value)

Coral HAPCs must meet at least one of these criteria, and are intended to be geographically representative of the South Atlantic region. The Oculina Bank was recognized as a CHAPC for its fragile, slow-growing Oculina corals, which support diverse deepwater ecosystems. While the use of mobile bottom gear was banned at that time, continued fishing activity led to extensive damage and impacts to fish communities. In 1994 this area was designated the Experimental Oculina Research Reserve under the Snapper Grouper FMP and closed to bottom fishing for species in the snapper grouper complex for the next 10 years, and in 1995 was closed to bottom anchoring by fishing vessels.

In 1998, the Council developed a Habitat Plan and a Comprehensive EFH Amendment to address EFH requirements for South Atlantic FMPs. The Habitat Plan identified both habitat types and sites as EFH-HAPCs for most of the Council's FMPs, and utilizes a separate process and set of criteria for identifying CHAPCs.

EFH-HAPCs for FMPs

The 1998 Comprehensive EFH Amendment identified EFH-HAPCs for most of the Council's current FMPs. The South Atlantic identified EFH on the basis of an extensive literature review, with EFH generally

[7] The joint South Atlantic and Gulf of Mexico Coral FMP was separated into two regional FMPs in 1994.
[8] Summary; see Table 11, p. 76 of the Habitat Plan (SAFMC 1998).

corresponding to the availability of Level 1 or 2 habitat data[9], and HAPC informed by the availability of higher-tier data (Wilber, pers. comm.) Habitat types and sites designated EFH-HAPCs under the EFH provisions are ranked high, medium, or low across the four HAPC considerations.

The South Atlantic designated HAPCs on a fishery and FMP-specific basis. The council identified specific areas as HAPCs (e.g. known areas of offshore hard bottom), as well as habitat types (e.g. mangrove habitat), features (e.g. coastal inlets) and HAPCs tied to habitat designations at the state level (e.g. state-designated nursery habitats of particular importance to shrimp). The combination of HAPC sites and types varies by FMP, and a particular area or habitat type is often identified as a HAPC for multiple FMPs. The EFH-HAPCs identified under this amendment are not associated with any protective measures. The Council established the Dolphin and Wahoo FMP and designated EFH and EFH-HAPCs for these species in 2004.

Coral HAPCs

The Habitat Plan and Comprehensive EFH Amendment recognize the importance of coral and hardbottom habitats in multiple ways. The Council draws a clear distinction between EFH-HAPCs identified according to the four considerations of ecological function, sensitivity, exposure to development stress, and rarity, and CHAPCs identified according to the four considerations described in the 1984 Coral FMP. EFH-HAPCs are intended to recognize habitat types and areas of special significance to managed species, and CHAPCs are intended to focus regulatory and enforcement measures.

Corals are managed under the Coral, Coral Reef, and Live/Hardbottom Habitat FMP, and also serve as important habitat for other managed species. Coral areas may be co-designated as CHAPCs, and as area or habitat-based EFH-HAPCs in the context of the Snapper-Grouper and/or Coral FMPs. The overlay of area-based CHAPCs with area or habitat type-based EFH-HAPCs reflect that coral and hardbottom habitats are important wherever they occur, and that coral and hardbottom habitats are not contiguous, but part of interrelated habitat types (including sand and substrate) that provide important habitat functions. Reefs and corals rank “high” in terms of ecological function, sensitivity, and rarity as EFH-HAPC for snapper-grouper, and rankings vary for the individual sites.

Comprehensive Ecosystem-Based Amendments

Since the initial Habitat Plan and Comprehensive EFH Amendment, there have been several updates to HAPCs in the South Atlantic region. The original Habitat Plan, which served as the source document for EFH descriptions, evolved into a Fishery Ecosystem Plan that serves as a source document and basis for Comprehensive Ecosystem-Based Amendments (CEBAs). Changes to CHAPCs and EFH-HAPCs have been implemented through this process, with participation from the Coral and Habitat Committees, Coral and Habitat Advisory Panels, fishermen and other experts.

CEBA 1 designated areas of deep sea corals as CHAPCs as a largely proactive effort to protect corals and associated species from potential fishing impacts. These areas were recognized as CHAPCs but not as EFH-

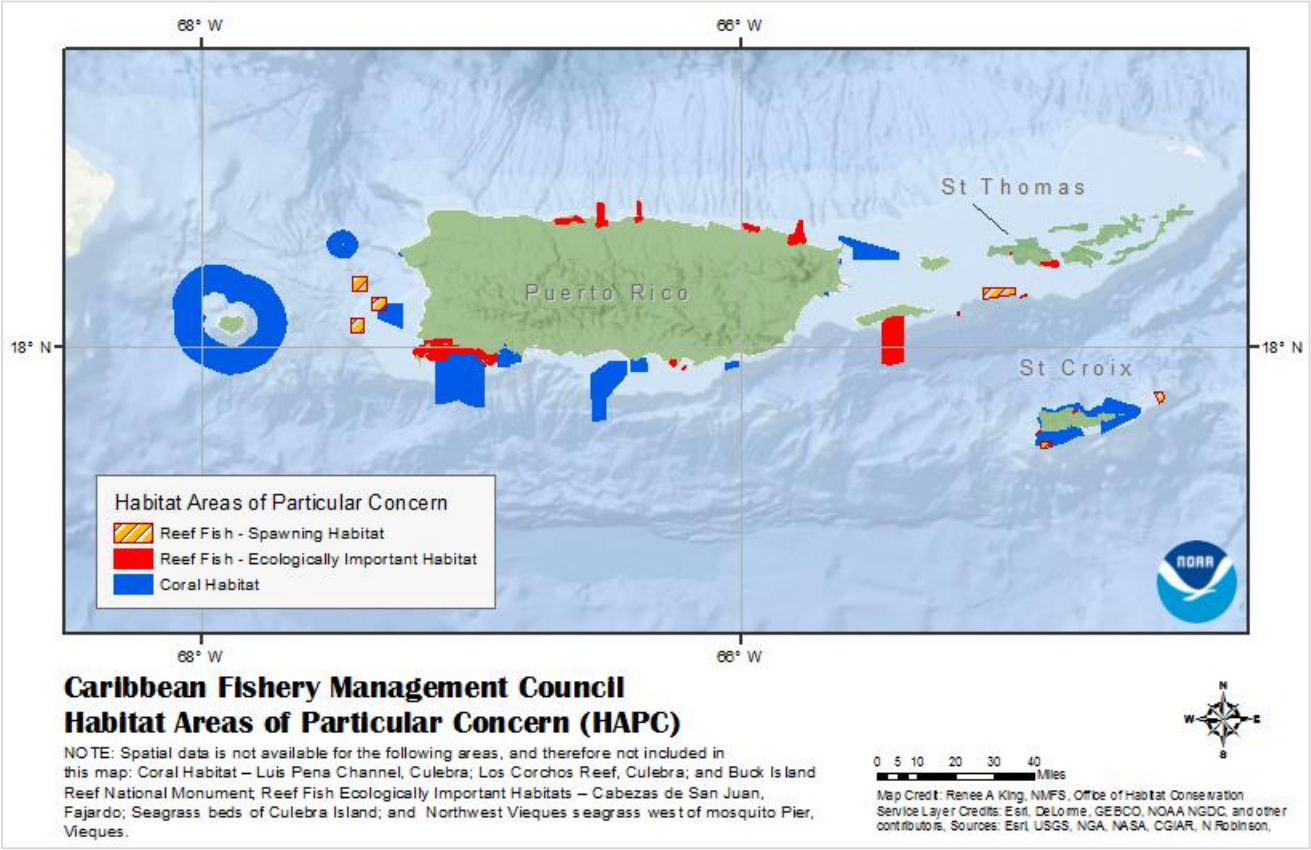
[9] The EFH Final Rule describes a 4-tier approach to organizing the information used to describe and identify EFH. Level 3 indicates that growth, reproduction, or survival rates are available; Level 4 indicates that production rates by habitat are available. (50 CFR § 600.815).

HAPCs, and thus not conferred the standing of HAPCs designated under the EFH provisions of the MSA. The use of damaging bottom gear, anchoring by fishing vessels, and possession of managed coral species is prohibited. CEBA 1 also established allowable golden crab fishing areas and shrimp fishery access areas within two of these HAPCs, to allow these small and specialized fisheries to operate within specific boundaries that correspond to historical fishing areas.

Comprehensive Ecosystem-Based Amendment 2 (CEBA 2), implemented in 2012, designated additional EFH-HAPCs for the Snapper Grouper FMP and new deepwater CHAPC under the Coral, Coral Reef, and Live/Hard Bottom Habitat FMP. CEBA 2 designated a network of eight deepwater Snapper Grouper Marine Protected Areas (MPAs) as EFH-HAPCs for the snapper-grouper complex. These MPAs were previously established through a 2009 amendment to the Snapper Grouper FMP to support the management of snapper grouper species, many of which are long-lived and possess complex life histories. Fishing for all species in the snapper-grouper complex is prohibited in these areas. CEBA 2 also designated the deepwater CHAPCs established under CEBA 1 as EFH-HAPCs. In addition, new EFH-HAPC was established for golden and blueline tilefish. These actions in combination were intended to reinforce the Council's ability to protect these important areas from fishing impacts, and to support enhanced EFH consultations.

The South Atlantic Council is also a party to a Memorandum of Understanding among the three East Coast councils to help coordinate the protection of deep sea corals.

4. Caribbean



Summary of current approach

The Caribbean Fishery Management Council identified a large number of discrete sites as Habitat Areas of Particular Concern (HAPCs) under its Reef Fish and Coral Fishery Management Plans (FMPs). The U.S. Caribbean region has limited life history and habitat distribution information, and current HAPC sites were proposed by the Council's Scientific and Statistical Committee (SSC) and Habitat Advisory Panel and adopted through a Comprehensive Amendment in 2005. HAPCs are identified under the Reef Fish and Coral FMPs and include a set of known spawning sites in federal waters, which are protected through seasonal spawning closures and gear restrictions, and areas of mangrove, seagrass, and coral habitat in state waters. Many of the HAPCs in state waters correspond to areas identified as parks and reserves at the federal level and/or by the Commonwealth of Puerto Rico or territory of the U.S. Virgin Islands, and are recognized for their ecological value to a broad range of managed and protected species.

History and evolution

The Council's Generic Essential Fish Habitat (EFH) Amendment, completed in 1998, designated habitat types as HAPC, including estuarine habitats (wetlands, salt marshes, and mangroves) and marine habitats (water column, seagrass, non-vegetated bottom- sand, mud-, algal plains and coral reefs). Hind Bank, off the coast of St. Thomas, was the only discrete area identified as a HAPC. Hind Bank corresponds with a no-take marine conservation district adopted through an Amendment to the Coral FMP in order to protect corals within a spawning aggregation site of red hind. Anchoring is also prohibited in this area. All habitats were generally recognized for their ecological function and value to Caribbean fisheries. At the time, EFH

for Federally managed Caribbean species was identified and described based on the distribution of corals and a limited number of managed species, and the Generic Amendment notes that additional life history information would be necessary to identify both EFH and HAPCs.

In 2004, the Caribbean completed an Environmental Impact Statement (EIS) for the 1998 Generic Amendment, and identified changes to HAPC that were subsequently adopted through a 2005 Comprehensive Amendment to Caribbean FMPs. This EIS was prepared by a contractor who explored metrics for describing, evaluating, and then mapping potential HAPC sites in terms of the four HAPC considerations. Because there was insufficient information to support this approach in the Caribbean, HAPCs were instead proposed by an expert panel consisting of the Council's SSC and Habitat Advisory Panel. The Comprehensive Amendment designated more than 40 additional HAPCs, primarily discrete locations, off the coasts of Puerto Rico, St. Thomas, and St. John. The HAPCs identified in the Comprehensive Amendment fall into the three categories described below. The first two categories of HAPCs are more closely aligned with reef fish management and were adopted under the Reef Fish FMP. The third category of HAPCs was adopted under the Coral FMP.

Reef Fish Spawning Site HAPCs (Reef Fish FMP)

Eight confirmed reef fish spawning locations are identified as HAPCs under the Reef Fish FMP. While these areas were identified on the basis of spawning activity, they are presumed to contain coral and live/hard bottom habitats, and therefore recognized for ecological function as well as sensitivity to degradation. One of these areas, Hind Bank, was previously identified in 1998 as HAPC and protected as a no-take reserve under the Coral FMP. A well-known grouper spawning aggregation, El Seco in Vieques, is identified as a HAPC but is completely within state waters. The remaining six were already subject to seasonal spawning closures. In addition, the Generic Amendment prohibited fishing with bottom-tending gear including pots and traps, nets and bottom longlines in these areas as part of a suite of measures to minimize adverse impacts to habitat from fishing. Anchoring is prohibited in two of the HAPCs and the requirement for an anchor retrieval system is in place for the others.

Additional Reef Fish HAPCs (Reef Fish FMP)

An additional 18 HAPCs are identified as areas of ecological importance to reef fish species under the Reef Fish FMP, primarily due to the presence of valuable estuarine, mangrove, and seagrass habitat. All sites are in state waters, and many were already recognized as parks or reserves at the federal and/or territorial or Commonwealth level, for example as a National Estuarine Research Reserve, National Wildlife Refuge, Natural Reserve, State Forest, Wildlife Sanctuary, or other designation. Most of these HAPCs are discrete sites. Some areas of seagrass beds in Puerto Rico waters are recognized as a habitat type within a defined location, since they are not precisely mapped and may vary over time. Areas within the U.S. Virgin Islands have specific restrictions on fishing activities.

All of these HAPCs are recognized for their ecological importance to the reef fish complex, and most are also considered sensitive and/or likely to be stressed by development activities. Although these sites are identified as HAPCs under the Reef Fish FMP, they are also recognized as areas of importance to other federally managed species including spiny lobster, queen conch, and corals, as well as protected species of marine mammals and sea turtles. The primary function of these habitats is as nursery and feeding grounds.

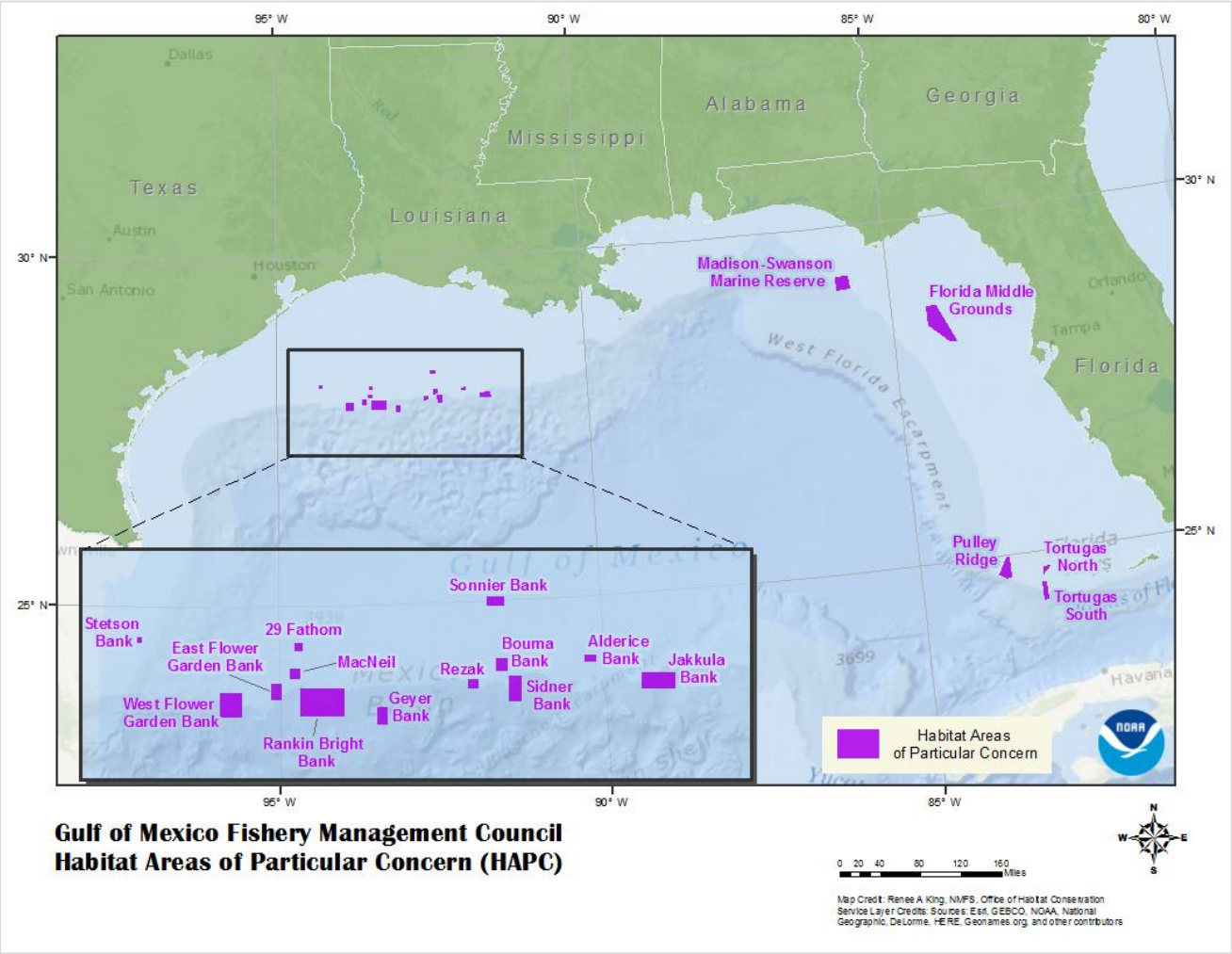
Coral HAPCs (Coral FMP)

An additional 19 HAPCs are identified as areas of ecological importance under the Coral FMP. Many of these sites are also recognized for their sensitivity and potential to be stressed by development. As a group, these HAPCs share similarities with HAPCs identified under the Reef Fish FMP, though were considered most closely aligned with the Coral FMP. All sites are in state waters, and many are also recognized as reserves and parks at the federal and/or territorial/Commonwealth levels. As with the Reef Fish HAPCs, these sites are recognized as benefitting other federally managed and protected species. These HAPC sites contain corals and are in some cases identified at a scale (e.g., state forest) that includes a variety of other habitat types such as mangroves, seagrass beds, and coastal wetlands. Most of these have a restriction on fishing activities and prohibit anchoring, especially in areas contiguous to federal waters such as the Buck Island Reef National Monument.

Recent efforts

A review of EFH and HAPC designations was completed by a contractor in 2011. The report concluded that a comprehensive EFH amendment was not justified, but noted that additional HAPC designations could be considered by expert recommendation. The Caribbean Council has also contracted work to characterize EFH and HAPCs through the NOAA Coral Reef Conservation Program.

5. Gulf of Mexico



Summary of current approach

The Gulf of Mexico Fishery Management Council initially identified habitat types as well as specific sites as Habitat Areas of Particular Concern (HAPCs) in 1998, and replaced these with a set of discrete sites in 2005. The Council identified 18 areas as HAPCs. All are spatially defined areas in federal waters, and were designated primarily for the purpose of protecting coral and hard bottom habitat. Several of these areas are also designated as Marine Reserves, Marine Protected Areas, National Monuments, and National Marine Sanctuaries. Half of these areas include protection from adverse fishing impacts. Some areas had existing protections, and additional restrictions on anchoring and allowable gear types were adopted in conjunction with, though not as a direct result of, the Council's identification of these areas as HAPCs. The Council conducted an Essential Fish Habitat (EFH) review in 2010 and did not identify additional HAPCs. The Council is currently considering whether to add deep sea corals as coral HAPCs, or recognize these areas using the deep sea coral discretionary provision of the Magnuson-Stevens Act (MSA).

History and evolution

The Council first identified two sites as HAPCs under the Coral Fishery Management Plan (FMP) in 1984.[10] The Council's 1998 Generic Amendment to implement the EFH provisions of the 1996 MSA identified three habitat types (broadly defined in terms of intertidal and estuarine habitats, offshore areas of high habitat value and diversity or vertical relief, and ecologically important areas adjacent to human development activities)[11] with the intent of soliciting recommendations for specific sites from the Council, Advisory Panels, state and federal agencies, and academia. This amendment also identified nine specific sites that met at least one or more of the HAPC considerations, and included two Marine Sanctuaries, three National Estuarine Research Reserve sites, and one National Monument.

Triggerfish, McGrail Bank in the Gulf of Mexico. Source: National Undersea Research Center/UNCW and NOAA/Flower Garden Bank National Marine Sanctuary.

The Council later completed an Environmental Impact Statement (EIS) for this amendment, and in 2005 completed a Generic Amendment that replaces these HAPCs with a set of 18 spatially discrete sites. The 2005 Generic Amendment explored metrics for describing, evaluating, and then mapping potential HAPC sites in terms of the four HAPC considerations. Several concepts were proposed for designating HAPCs in terms of ecological importance, including spawning sites, nursery grounds, and migratory routes. Lacking the information to reasonably delineate areas based on those concepts, the Council chose an approach that would utilize expert opinion with regard to all four HAPC considerations.

Ultimately the Council focused its use of HAPCs on areas of living coral reef and hard bottom habitat. Many of these areas were already recognized by the Council and subject to protective measures including closures and gear restrictions. The 2005 amendment confirmed the status of these areas as HAPCs, and prohibited anchoring and the use of bottom-tending gear on these and additional sites. While these restrictions apply to areas that are HAPCs, they were adopted concurrently and did not directly result from the HAPC designation. The coral reef and hard bottom sites recognized as HAPCs meet one or more of the four EFH considerations.

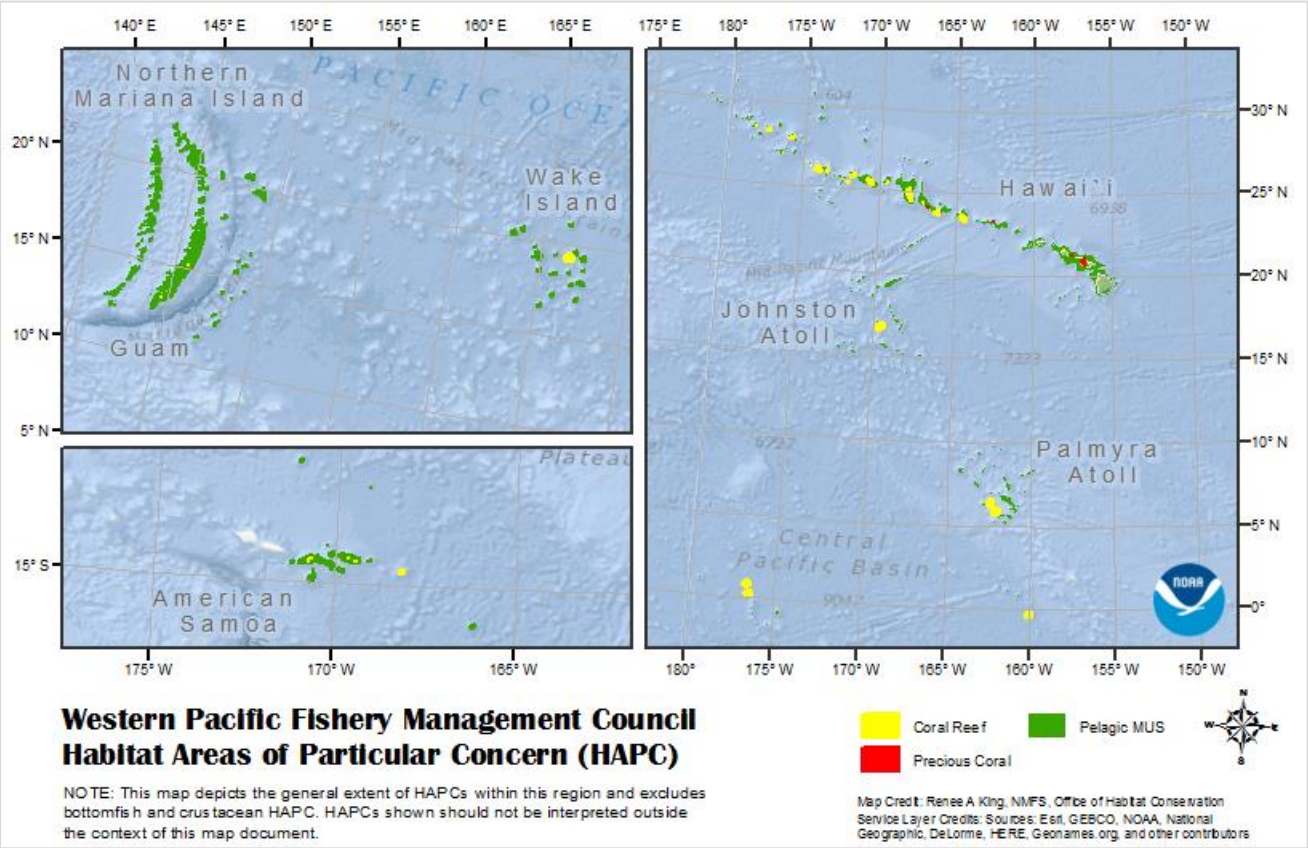
The Council completed an EFH 5-year review in 2010, which did not result in any changes to HAPCs. Staff reviewed existing HAPC designations and considered whether sites should be added or removed based on a literature review and consultation with experts. Some additional sites were identified as potential HAPCs, in response to new information about the habitat, species associations, and the growth of non-

[10] The Gulf Council identified 2 areas (Flower Garden Banks and Florida Middle Grounds) as "Habitat Area of Particular Concern" under a joint South Atlantic and Gulf of Mexico Coral FMP implemented in 1984. The use of this term pre-dates the EFH provisions of the 1996 MSA. HAPCs were identified with regard to a set of four considerations (see South Atlantic profile). These areas were designated as HAPCs under the EFH provisions in 2005.
[11] Summary; see section 7.3 of Generic Amendment 1 (GMFMC 1998).

fishing activities. The report noted that no studies have been conducted to evaluate the effectiveness of existing HAPCs, but that the designation has helped focus the Council's review of projects that may impact these areas, and that many of these sites have been protected. The final 2010 EFH report concluded that a comprehensive EFH amendment was not needed but that EFH descriptions could be updated on a FMP basis, and that additional HAPC designation could be considered at this time.

The Council is currently considering options for protecting deep sea corals, either as HAPCs under the EFH provisions, or using the deep sea coral discretionary authority of the Magnuson-Stevens Act (MSA). In December 2014 a Coral Working Group convened by the Council recommended that the council designate discrete areas as Coral HAPCs, rather than as deep sea coral areas, and recommended restrictions on bottom-tending gear and anchoring.

6. Western Pacific



Summary of current approach

The Western Pacific Regional Fishery Management Council's use of the Habitat Area of Particular Concern (HAPC) designation reflects the region's place-based approach to managing geographically isolated island regions, which include the State of Hawai'i, the territories of Guam and American Samoa, the Commonwealth of the Northern Mariana Islands, and eight remote island areas. Limited habitat information is available for most of the Western Pacific's regions and managed species, and HAPCs are primarily defined in terms of habitat types. Recently the Council and NOAA Fisheries Pacific Islands Regional Office have engaged in an effort to refine the identification of geographically defined HAPCs for Hawaiian Archipelago Bottomfish, in a process that provided the Council's most recent interpretation of the four HAPC considerations. HAPCs do not confer any specific habitat protections in the Western Pacific region, but in many cases existing coral reef species complex HAPCs intentionally correspond to the boundaries of previously established Marine Protected Areas (MPAs) and long term monitoring sites.

History and evolution

The Western Pacific Regional Fishery Management Council initially identified HAPCs in 2001, in the context of species-specific Fishery Management Plans (FMPs) for Bottomfish and Seamount Groundfish, Crustaceans, Pelagics, Precious Corals, and Coral Reef Ecosystems. HAPCs included some discrete sites, but were primarily described in terms of habitat types (e.g., water column, escarpments, and slopes) within defined depth contours. The HAPCs identified under the Coral Reef Ecosystem Fishery Ecosystem Plan include more than 50 sites. All sites meet at least one of the four HAPC considerations and existing

protective status is considered as a factor. Although these HAPCs are place-based, the implementing amendment notes that additional life history information would be needed to refine the location of these HAPCs and link them to individual species and life history stages. In 2009, the Council reorganized its FMPs into a set of place-based Fishery Ecosystem Plans (FEPs). The existing EFH and HAPC descriptions were carried forward into five separate FEPs for American Samoa, the Mariana Archipelago, the Hawaiian Archipelago, the Pacific Remote Island area, and Pacific Pelagics.

Blunt-head parrotfish (Chlorurus microrhinus) at Clam Gardens, inside Kingman Reef, part of the Pacific Remote Islands Marine National Monument.
Source: NOAA Coral Reef Conservation Program (Kevin Lino)

Hawaiian Archipelago Bottomfish and Seamount Groundfish HAPCs

The Council is nearing the end of a process to update EFH and HAPC designations for Bottomfish and Seamount groundfish in the Hawaiian Archipelago, where bathymetric mapping and additional fishery-independent sampling and research can support more precise identification of HAPC sites. The availability of this information is due in part to the Council's identification of bottomfish as a priority for the investment of research resources, in order to evaluate the efficacy of state bottomfish restricted fishing areas.

Bottomfish HAPC is currently defined as all slopes and escarpments from 40-280m, plus three known sites of juvenile habitat. In 2008, the NOAA Fisheries Pacific Islands Regional Office contracted with the University of Hawai'i to review and update existing information. One product of this review was a HAPC Justification Report, which proposes and describes the rationale for identifying a set of HAPC sites.

The 2010 HAPC Justification Report identified16 geographically discrete HAPC candidate sites, proposing that existing HAPCs are not sufficient to inform environmental impact statements or focus research or protective measures. Each of the proposed HAPCs meets at least one of the four HAPC considerations. Most are identified on the basis of ecological importance, and none are identified as susceptible to development. The three relevant HAPC considerations are described in the context of bottomfish EFH (Kelley et al., 2010):

> "Rarity was based on the presence of unusual physical or biological characteristics in the context of [the] current state of knowledge of bottomfish habitats."
>
> "…Ecological importance was evaluated with respect to modeled larval dispersal characteristics or the presence of critical life history stages (i.e., juveniles and spawning adults)."
>
> "Sensitivity was evaluated with respect to the habitat's vulnerability to disturbance from either fishing or non-fishing activities, [including] risk of significantly depleting the

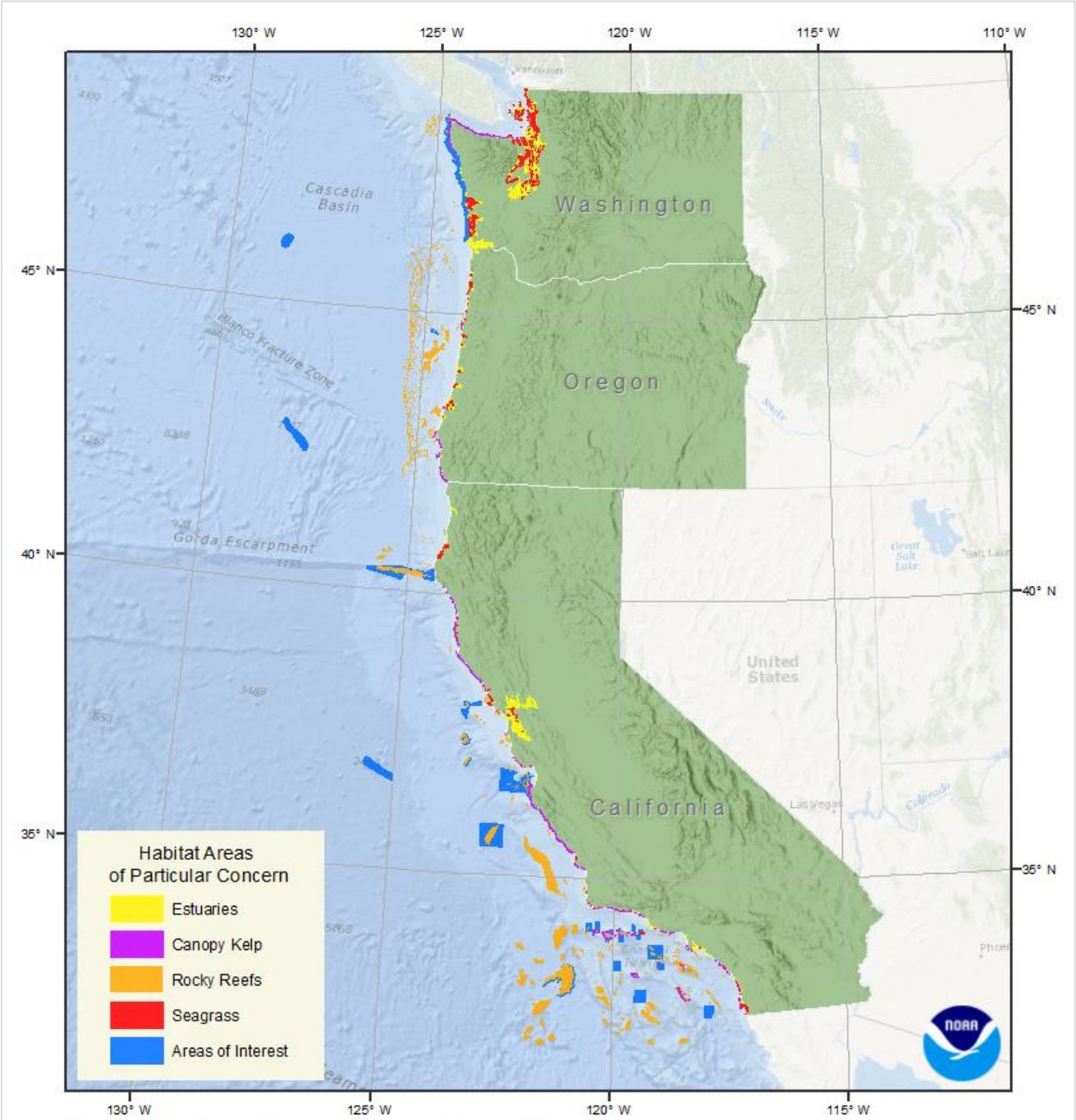
> targeted bottomfish species or presence of substantial invertebrate beds (i.e., corals or sponges) that could be impacted by fishing gear and anchors."

The report includes presence/absence data for key bottomfish species in each of the proposed sites, and includes additional justification for each site noting factors such as genetic continuity and connectivity between areas, enforceability, and the potential for fishing effort displaced from Papahānaumokuākea National Monument, where commercial fishing for bottomfish was recently phased out. Many of the proposed sites are identified as candidates for additional research. No specific protections are recommended, although some sites overlap with bottomfish restricted fishing areas adopted by the Hawai'i Department of Land and Natural Resources, in which fishing for bottomfish is prohibited.

The HAPC Justification Report was then reviewed by the Western Pacific Stock Assessment Review (WPSAR) bottomfish working group, which recommended reducing the number of candidate sites from 16 to seven. The working group concluded that HAPCs should be based upon survey information, catch data, and evidence of nursery grounds, and that other factors considered in the HAPC report such as impacts of fishing gear and connectivity were not well supported with scientific evidence. The group also determined that ecological importance should be considered the primary basis for identifying a HAPC, with the other three HAPC considerations serving a secondary role.

In 2012 the Council approved the WPSAR bottomfish working group's recommendations regarding bottomfish HAPC, and also recommended designating seamount groundfish HAPC to coincide with seamount groundfish EFH at Hancock Seamount. The Council anticipates that the amendment to the Hawaii Archipelago Fishery Ecosystem Plan to update EFH and HAPC designations will be approved in 2016.

7. Pacific



Pacific Fishery Management Council
Habitat Areas of Particular Concern (HAPC)

NOTE: Data for the Pacific Region are based on previous compilation efforts and do not necessarily reflect current habitat conditions. The PFMC also designated five additional HAPCs for Pacific Coast salmon that are not represented in this map: 1) complex channels and floodplain habitats; 2) thermal refugia; 3) spawning habitat; 4) estuaries; and 5) marine and estuarine SAV. The canopy kelp and seagrass HAPCs for groundfish can be used as a proxy for the salmon marine and estuarine SAV HAPC. With the exception of estuaries and Areas of Interest, none of the HAPCs on the West Coast have been comprehensively mapped. In addition, marine and estuarine SAV, canopy kelp, and seagrass HAPCs may vary in location and extent over time, and, therefore, may vary from the locations shown on this map. Defining criteria of all HAPCs, as described in the Pacific Coast Groundfish Fishery Management Plan and Appendix A to Amendment 18 of the Pacific Coast Salmon Fishery Management Plan, should be applied to determine whether a given area is designated as HAPC for groundfish species or salmon.

Map Credit: Renee A King, NMFS, Office of Habitat Conservation
Service Layer Credits: Sources: Esri, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat,

Summary of current approach

The Pacific Fishery Management Council's identification of Habitat Areas of Particular Concern (HAPCs) is notable for a sustained focus on important habitat types, as well as for the prominent role of public participation in the latest Groundfish Essential Fish Habitat (EFH) review process. The Council first identified several habitat types as well as several discrete areas as HAPCs for Pacific Coast Groundfish in 2005. The Council completed a review of EFH for the Pacific Coast Groundfish Fishery Management Plan (FMP) in 2014, using a process outlined in the Council's Operating Procedures (COP). This process provided for significant stakeholder participation through the formation of an EFH Review Committee, and a proposal process that enabled stakeholders to suggest modifications to EFH and HAPCs. The Council began the FMP amendment process in April 2015. The Council also recently completed an EFH review for Pacific salmon, and identified five habitat types as HAPCs. The habitat types identified as HAPCs for both groundfish and salmon are not all mapped, and may vary in location and extent. This approach to designating HAPCs acknowledges the importance of these habitat types wherever they occur.

History and evolution

Groundfish

The Pacific Fishery Management Council first described EFH for groundfish in 1998, but did not identify HAPCs at this time. Amendment 19 to the Groundfish FMP implemented in 2006 identified habitat types as well as specific "areas of interest" as HAPCs. The four habitat types identified as HAPCs include estuaries, canopy-forming kelp, seagrass, and rocky reefs. Each habitat type meets two of the four HAPC considerations (ecological importance and sensitivity to human-induced environmental degradation), and estuaries are also identified as stressed by development. All four habitat types were mapped to provide approximate locations using available data at the time, but are also defined in terms of their text descriptions such that these habitat types constitute HAPC wherever they are found to exist. The distribution of kelp and seagrass habitat can vary over time, and mapping data was incomplete for kelp and seagrass as well as for rocky reefs. A fifth habitat type, representing a series of 13 oil rigs in southern California, was proposed as a HAPC but disapproved when NOAA Fisheries concluded that there was insufficient evidence to link oil rigs with the four HAPC considerations.

Amendment 19 also identified several "areas of interest" as HAPCs due to their unique geological and ecological characteristics. These include several seamounts and banks, Monterey Canyon, areas of the Channel Islands National Marine Sanctuary, and state waters off the coast of Washington. In some cases there may be overlap between habitat types (e.g., estuaries and seagrass) or between a habitat type and a discrete area (e.g., kelp canopy and Washington State waters). While groundfish HAPCs are not directly associated with protective measures, they may overlap with closures and restrictions on some or all forms of bottom contact fishing gear, adopted to minimize adverse impacts to EFH. HAPCs may also overlap with areas that are protected under other authorities, such as National Marine Sanctuaries.

Amendment 19 also describes a process that would allow organizations or individuals to petition the Council at any time to modify or eliminate an existing HAPC, or consider adopting a new one. The Council subsequently developed a formalized Process for Essential Fish Habitat Review and Modification, which is described in the Council's Operating Procedures (COP 22). COP 22 establishes the membership and operating guidelines for an EFH Review Committee (EFHRC), and a process for reviewing groundfish EFH

and HAPCs. COP 22 was revised in 2011 to specify that potential HAPCs would be identified through the periodic EFH review process, rather than an ongoing basis.

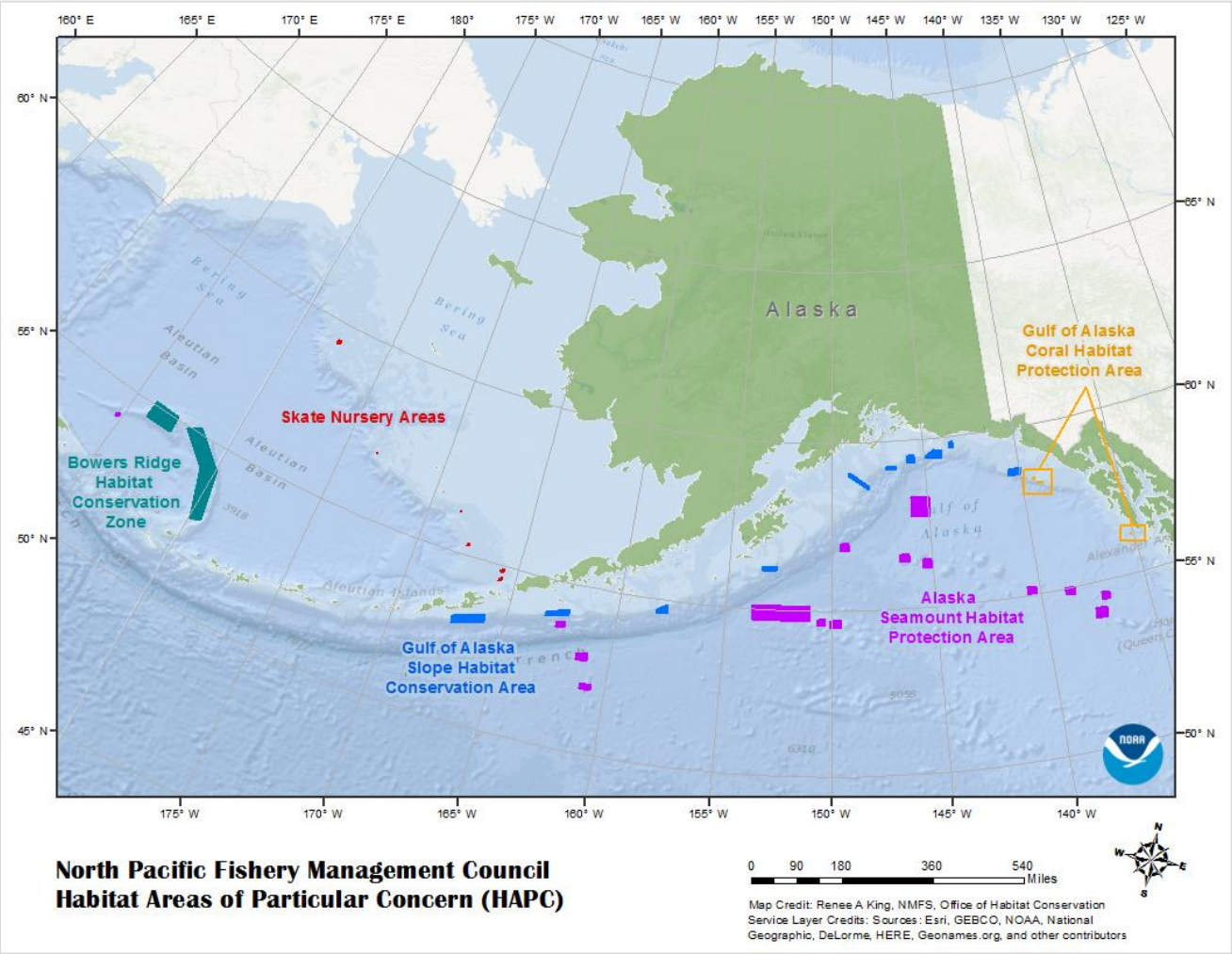
The process outlined in COP 22 is now guiding the Council's groundfish EFH review process, which was initiated in December 2010 and is being carried out in three phases. In Phase 1, the EFHRC reviewed new information and NOAA Fisheries provided a synthesis report to the Council. In Phase 2 the Council provided evaluation of the new information, and initiated a request for proposals for potential changes to EFH and HAPC. Three of the eight proposals received identified five new area-based HAPCs. However, the Council decided to not identify any new HAPCs at this time. Phase 3 of this process, amending the groundfish FMP, is now underway and is focused on making changes to the areas where bottom trawling is prohibited to protect EFH.

Salmon

A new set of HAPCs for Pacific salmon was implemented via final rule in early 2015. The Council first convened a Pacific Coast Salmon EFH Oversight Panel in 2009 to review available information and recommend revisions to salmon EFH and HAPCs. The Oversight Panel, composed of Council and NOAA Fisheries staff and experts, recommended designating five habitat types as HAPCs, which the Council adopted via Amendment 18 to the Salmon FMP.

The habitat types identified as HAPCs for Pacific salmon reflect the distinctive habitat needs of anadromous species and include complex channels and floodplain habitat, thermal refugia (areas of cooler water, which are critical to salmon survival), spawning habitat, estuaries, and marine and estuarine submerged aquatic vegetation. All five HAPC types are located in state waters or inland, and are identified to support the EFH consultation process. These habitat types are already acknowledged for their importance as critical habitat for ESA listed species, and the HAPC designation itself is not anticipated to substantially influence EFH conservation recommendations. Each of the habitat types is described in terms of ecological importance, sensitivity, and exposure to development stress. None of the habitat types are inherently rare, but are becoming less prevalent due to habitat loss and coastal and inland development. Of the five habitat types only estuaries are well mapped. Others are identified by text descriptions that refer to a broad range of habitat parameters including substrate type and also properties such as temperature, salinity, flow, and dissolved oxygen content.

8. North Pacific



Summary of current approach

The North Pacific Fishery Management Council utilizes a highly structured and inclusive process for identifying and reviewing potential Habitat Areas of Particular Concern (HAPCs). The Council identifies priorities for candidate HAPCs based on input from the stock assessment process, and issues a request for proposals from the public, including stakeholders as well as management partners including NOAA Fisheries. These proposals are reviewed and ranked according to the four HAPC considerations as well as a data certainty factor. Proposed HAPCs must meet at least two of the four considerations, including rarity.

The Council originally identified habitat types as HAPCs before adopting a place-based approach and proposal process, which was revised in 2010 and is now aligned with the 5-year Essential Fish Habitat (EFH) review cycle. Through two iterations of this proposal process, the Council identified seamounts and coral areas as HAPCs and adopted restrictions on the use of bottom fishing gear, and most recently identified areas of skate egg concentration as HAPCs in order to focus monitoring and additional research.

History and evolution

The Council first identified three habitat types as HAPCs in 1998 (NPFMC 2012)[12]:

- Areas with living substrates in shallow waters (e.g., eelgrass, kelp, mussel beds);
- Areas with living substrates in deep waters (e.g., sponges, corals, anemones)
- Freshwater areas used by anadromous fish (e.g. migration, spawning, and rearing areas)

Living substrates in shallow waters were recognized as important habitat for multiple council-managed species. Living substrates were recognized for their value to groundfish, and freshwater areas for their value to Pacific salmon and other anadromous species such as smelt.

At that time, the Council also solicited proposals for additional HAPCs and options for minimizing adverse impacts from fishing. This process generated recommendations for additional HAPC locations and habitat types, as well as two proposals for minimizing adverse impacts. In response, the Council initiated the development of a plan amendment. This process resulted in two significant outcomes. First, a proposal by the Council to classify HAPC biota as prohibited species ultimately resulted in the State of Alaska prohibiting a fishery for these species in the EEZ, utilizing a state-specific provision (§ 306 (a)(3)) of the Magnuson-Stevens Act (MSA). Second, the Council chose to proceed instead with the development of a more comprehensive and inclusive process for HAPC identification and protection.

As part of the development of a 2005 Environmental Impact Statement (EIS) to address the 1998 EFH Fishery Management Plan (FMP) amendments, the Council rescinded the original habitat type HAPC designations, and outlined a site-based HAPC proposal and review process. Through this process, the Council issues a request for HAPC nominations, and sets priorities based on input from the stock assessment process. Proposed sites must meet the HAPC consideration of rarity, plus at least one more of the four considerations. Proposals are then reviewed by Council staff and plan teams, at which point the Council can select proposals for further analysis.

This process was proposed to occur on a three-year cycle. The first round was initiated in 2003, and the Council identified two priority areas (NMFS 2005):

- Seamounts in the Exclusive Economic Zone (EEZ), named on National Oceanic and Atmospheric Administration (NOAA) charts, that provide important habitat for managed species
- Largely undisturbed, high-relief, long-lived hard coral beds, with particular emphasis on those located in the Aleutian Islands, which provide habitat for life stages of rockfish or other important managed species.

Nominations were also to be based on the best available scientific information and include the following features:

- Sites must have likely or documented presence of FMP rockfish species
- Sites must be largely undisturbed and occur outside core fishing areas.

[12] A detailed history of the North Pacific's approach to the HAPC designation is provided in sections 2.1 and 2.2 of the 2012 HAPC EA (NPFMC 2012)

As a result of this process the Council identified Alaska Seamount Habitat Protection Areas, Gulf of Alaska Coral Habitat Protection Areas, and the Bowers Ridge Habitat Conservation Zone. Gear restrictions adopted as part of the HAPC designation process prohibit the use of some or all forms of bottom contact fishing gear in most of these areas. These HAPCs and gear restrictions were adopted in 2006 via amendments to the Crab and Groundfish FMPs.

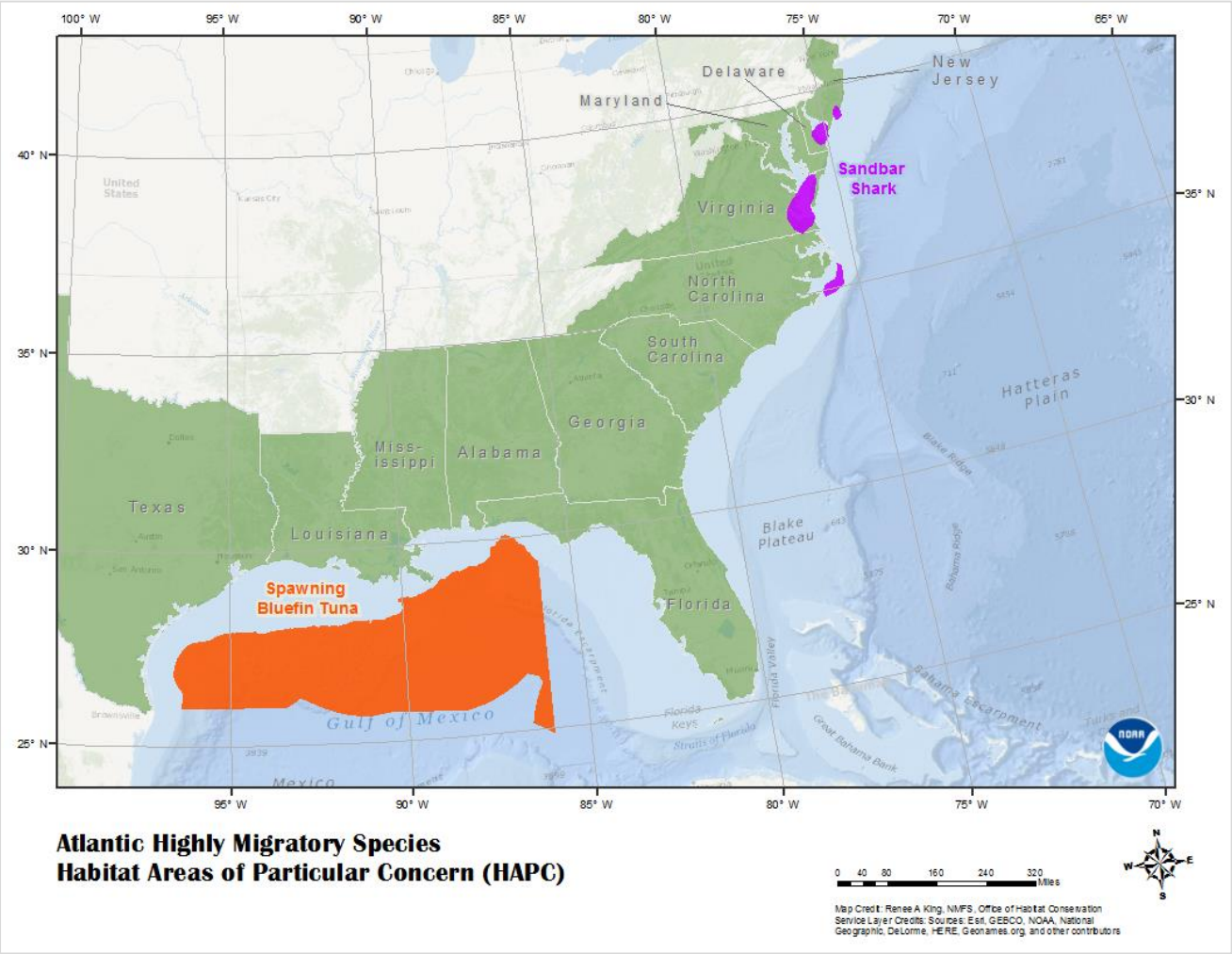
Large primnoid coral loaded with brittle stars on Dickins Seamount. Source: NOAA Office of Ocean Exploration.

Following the first HAPC proposal cycle in 2003, the Council considered additional HAPC priorities but did not initiate a new proposal cycle. In 2010, the Council adopted revisions to the HAPC proposal process addressing consistency in the information included in proposals, and the definition of HAPC criteria and how these are applied to candidate sites.

The Council's 2010 HAPC Process Document describes the Council's current approach, the information that must be included in a HAPC proposal, and a scoring process for ranking candidate HAPCs on a level from 0 to 3 across the four HAPC considerations. This document also establishes a data certainty factor, which describes the level of information used to describe the candidate HAPC from 1 (habitat information does not exist; identified by inference or proxy) to 3 (site-specific habitat information is available). The data certainty factor is not necessarily used to eliminate potential HAPCs; for example, it could be used to help identify research priorities or areas where NOAA Fisheries could contribute additional information. Proposals are received and reviewed by staff, plan teams, and the Council's Scientific and Statistical Committee (SSC), Advisory Panel (AP), and Enforcement and Ecosystem Committee. At this point the Council can choose to accept and analyze a candidate site for HAPC designation, identify a site or a topic as an area for further research, or reject the proposal.

The Council also chose in 2010 to align the HAPC process with EFH 5-year reviews (rather than the three-year cycle initially proposed), and initiated a new Request for Proposals (RFP) with areas of skate egg concentration identified as a priority. This RFP resulted in a proposal from the NOAA Fisheries Alaska Fisheries Science Center to consider six areas of skate egg concentrations. All six areas were subsequently identified as HAPC. The Council considered but did not adopt any gear restrictions, and requested that these sites be monitored and information be included in the Ecosystem chapter of the Council's Stock Assessment and Fisheries Evaluation (SAFE) report.

9. Atlantic Highly Migratory Species



Summary of current approach

Atlantic Highly Migratory Species (HMS) are managed internationally through the International Commission for the Conservation of Atlantic Tunas (ICCAT), and domestically in the U.S. under the Magnuson-Stevens Act (MSA) through a fishery management plan (FMP) administered by NOAA Fisheries.[13] The role of MSA habitat authorities is unique in the management context of highly mobile pelagic species. NOAA Fisheries has identified areas of nearshore habitat in the Mid-Atlantic region as habitat areas of particular concern (HAPC) for sandbar sharks, and a large area of offshore habitat in the Gulf of Mexico as HAPC for bluefin tuna. Both HAPCs focus on areas of ecological importance for spawning and early life stages. While neither HAPC is directly associated with fishing restrictions, there is no targeted fishery for either species permitted in the regions where the HAPCs have been identified. NOAA Fisheries

[13] Cooperative management of Atlantic tuna, swordfish, and billfish stocks is coordinated by the International Commission for the Conservation of Atlantic Tunas (ICCAT), with conservation and management recommendations implemented in the U.S. under the authority of the Magnuson-Stevens Act and Atlantic Tunas Convention Act. The conservation and management of Atlantic sharks is conducted solely under the Magnuson –Stevens Act. See section 1.1 of the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan for a description of HMS management history and process (NMFS 2006).

completed a Final EFH 5-Year Review in June 2015 and indicated that the HAPCs for sandbar sharks and bluefin tuna could be reevaluated by NOAA Fisheries if warranted. The Final EFH 5-Year Review also indicated that NOAA fisheries may also evaluate if four new HAPCs for lemon sharks, sand tiger sharks, white sharks, and larval billfishes are warranted. This evaluation will occur in an upcoming amendment to the 2006 Consolidated Atlantic HMS Fishery Management Plan (Amendment 10), which will be available to the public in draft form later in 2016. The final Amendment is anticipated to be published in early 2017.

History and evolution

Overview of HMS management

Atlantic HMS, including Atlantic tunas, swordfish, sharks, and billfishes, are managed domestically and internationally, and span multiple U.S. regional fishery management council jurisdictions. In the U.S., the 2006 Consolidated Atlantic Highly Migratory Species Fishery Management Plan[14] is administered by NOAA Fisheries under the Secretarial authority of the MSA. This FMP and its amendments are developed and implemented by NOAA Fisheries with input from an advisory panel that includes commercial, recreational, scientific, and environmental stakeholders, as well as representatives from East Coast fishery management bodies (state, interstate, and international). The HMS Advisory Panel provides input and advice on the development of FMP amendments but is not a voting body. Management alternatives are developed and selected by NOAA Fisheries. The Atlantic HMS FMP is subject to the same requirements as all federally managed FMPs, including the requirement to describe and identify Essential Fish Habitat (EFH). NOAA Fisheries can thus also identify HAPCs for HMS.

Atlantic HMS utilize pelagic habitat throughout the U.S. Exclusive Economic Zone (EEZ), from inshore and continental shelf areas to the open ocean. EFH is currently defined according to geographic text descriptions and probability boundaries created by analyzing point data in a Geographic Information System established by species and life history stage, when sufficient information is available. Most HMS fishing takes place in the water column and impacts to EFH are considered negligible. While EFH for Atlantic HMS is primarily offshore, a wide array of non-fishing impacts in the coastal zone are recognized as potentially impacting HMS EFH, and more recently some stakeholders have raised concerns related to aquaculture and seismic testing (Cooper, pers. comm). Nearshore waters are also particularly important to some shark species for mating, pupping, and nursery habitat.

The contribution of habitat conservation to sustainable management of HMS using MSA habitat authorities is different than for many other federally managed species, because HMS are managed by the U.S. only in federal waters, which may comprise a small portion of their total range. While management of some species is coordinated internationally, other HMS (including sharks) are only managed domestically. The role of habitat conservation and the potential to identify HAPCs for HMS may change in the future as offshore non-fishing activities become more prevalent, the association of HMS with nearshore habitat and structure is better understood, and/or as assessments and management measures shift from the complex to the species level (Cooper, pers.comm.).

[14] Two separate FMPs for Atlantic Tunas, Swordfish, and Sharks; and Atlantic Billfish, were merged into a single Consolidated Atlantic Highly Migratory Species Fishery Management Plan in 2006.

Sandbar shark HAPC

EFH was first identified and described for Atlantic tunas, swordfish, and sharks in 1999. This FMP identified HAPC for sandbar sharks as follows (NMFS 1999):

> "Important nursery and pupping grounds…in shallow areas and the mouth of Great Bay, NJ, lower and middle Delaware Bay, lower Chesapeake Bay, MD and near the Outer Banks, NC, in areas of Pamlico Sound adjacent to Hatteras and Ocracoke Islands and offshore those islands."

At the time, sandbar sharks were identified as one of the most commercially important shark species in the shark fishery of the southeastern U.S. In 2002, sandbar sharks were determined to be experiencing overfishing, and an amendment to the FMP established a time/area closure off the coast of North Carolina to protect pupping and nursery areas for both sandbar sharks and dusky sharks (a prohibited species). This area was identified for a time/area closure due to high catch rates of neonate and juveniles of both species, and encompasses the area identified as HAPC for sandbar sharks. A 2011 assessment determined that sandbar sharks were overfished but that overfishing is not occurring. Sandbar sharks cannot be commercially or recreationally retained.

Bluefin tuna HAPC

NOAA Fisheries conducted an EFH review and amendment to the 2006 Consolidated HMS FMP in 2009, and a HAPC for spawning bluefin tuna was suggested by two conservation and research organizations during the scoping process. The bluefin tuna HAPC is defined as a broad area of the western Gulf of Mexico, from the 100 m depth contour seaward to the boundary of the EEZ. This area is identified as the only known spawning location for western Atlantic bluefin tuna. While there are no restrictions on fishing directly associated with the identification of this area as HAPC, there is no targeted fishery for bluefin tuna in the Gulf of Mexico, and incidental landings in the Gulf of Mexico are limited.

EFH 5-year review

NOAA Fisheries completed a Final EFH 5-Year Review for all Atlantic HMS in June 2015. The Final EFH 5-Year Review identified new information that could support the designation of new HAPC sites, including nursery areas for lemon sharks off southeastern Florida and Mississippi, nursery areas for sand tiger sharks in Delaware Bay and near Cape Cod, nursery areas in the Mid-Atlantic and aggregation sites off of the coast of Massachusetts for white sharks, and potential spawning sites (inferred from larval distribution research) in the Florida Straits, Gulf of Mexico, and U.S. Caribbean for billfishes. The Final EFH 5-Year Review document determined that an amendment to the FMP was necessary to update Atlantic HMS EFH. The upcoming amendment (Amendment 10) would consider revision of current and delineation of new HAPCs as warranted.

References and Additional Resources

New England

NEFMC. 1998. Final Amendment #11 to the Northeast Multispecies Fishery Management Plan, Amendment #9 to the Atlantic Sea Scallop Fishery Management Plan, Amendment #1 to the Monkfish Fishery Management Plan, Amendment #1 to the Atlantic Salmon Fishery Management Plan, and Components of the Proposed Atlantic Herring Fishery Management Plan for Essential Fish Habitat. Volume I. Newburyport, MA. 388 p.

NEFMC. 2000. Habitat Annual Review Report. Prepared and reviewed by the Essential Fish Habitat Technical Team. Newburyport, MA. 120 p.

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2013. Integrating Habitat: A Necessary Part of the Equation. Position paper prepared by C.M. "Rip" Cunningham, former Chair, New England Fishery Management Council, in preparation for the Managing Our Nation's Fisheries 3 Conference, May 7-9, 2013, Washington, DC.

NEFMC. 2014. Draft Omnibus Essential Fish Habitat Amendment 2. Amendment 14 to the Northeast Multispecies FMP, Amendment 14 to the Atlantic Sea Scallop FMP, Amendment 4 to the Monkfish FMP, Amendment 3 to the Atlantic Herring FMP, Amendment 2 to the Red Crab FMP, Amendment 2 to the Skate FMP, and Amendment 3 to the Salmon FMP, including Draft Environmental Impact Statement. Newburyport, MA. Volumes I, II, III, and IV.

NEFMC. 2014. Omnibus Essential Fish Habitat Amendment 2 Public Hearing Document. Newburyport, MA. 57 p.

NEFMC. 2016. Final Omnibus Essential Fish Habitat Amendment 2. Amendment 14 to the Northeast Multispecies FMP, Amendment 14 to the Atlantic Sea Scallop FMP, Amendment 4 to the Monkfish FMP, Amendment 3 to the Atlantic Herring FMP, Amendment 2 to the Red Crab FMP, Amendment 2 to the Skate FMP, and Amendment 3 to the Salmon FMP, including a Final Environmental Impact Statement. Newburyport, MA.

Personal communication with David Stevenson, Marine Habitat Resource Specialist, Habitat Conservation Division, NOAA Fisheries Greater Atlantic Regional Office. December 9, 2014.

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