



Integrating Habitat in Ecosystem-Based Fishery Management

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Abstract:

Healthy freshwater, coastal and marine habitats are essential to fisheries and coastal communities, and to the ecosystem functions on which both depend. Since the 1996 Sustainable Fisheries Act, Regional Fishery Management Councils in partnership with the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service have made progress on addressing adverse impacts of fishing and non-fishing activities on habitat. Yet too often, habitat issues have not been integrated into mainline fisheries management. Many coastal habitats are still at risk, with adverse impacts to fisheries that are poorly understood and masked by overfishing. Our success in addressing overfishing provides an opportunity for a greater focus on habitat, better integrating habitat issues into ecosystem-based fisheries management and better integrating marine fisheries into an ecosystem approach to ocean management. We propose several practical steps toward this goal: 1) Identifying and delineating priority habitats and their vulnerabilities; 2) Setting habitat conservation objectives; 3) Integrating habitat conservation explicitly into other aspects of fisheries management; and 4) Expanding partnerships and building alliances to conserve habitat. NOAA's "Habitat Blueprint" provides a roadmap to focusing federal resources and achieving these steps.

Introduction:

Healthy habitats sustain resilient and thriving marine and coastal resources, communities, and economies. It is appropriate that habitat conservation is a major topic in the 3rd Managing our Nation's Fisheries Conference, as the ecosystem functions, goods and services provided by conserving and restoring riverine, coastal and deepwater habitat play a critical role in sustaining fisheries and recovering protected species. Therefore it is imperative that we incorporate habitat conservation into any effort at ecosystem-based management.

The goal of ecosystem-based management is to sustain diverse, productive, resilient coastal and marine ecosystems and the services they provide, thereby promoting the long-term health, security, and well-being of our Nation (National Ocean Council 2012). To reach this goal, we must ensure that the ecosystem services provided by protecting and restoring riverine, coastal and deepwater habitat are more clearly defined, demonstrated, and valued. The National Oceanic and Atmospheric Administration (NOAA) has established a Habitat Blueprint that gets to the heart of ecosystem approaches to management. The Blueprint provides a focusing mechanism to leverage NOAA and other funding sources on issues critical to accomplishing our habitat conservation mission.

In this paper, we briefly sketch out the progress that the Regional Fishery Management Councils (Councils) and the National Marine Fisheries Service (NOAA Fisheries) have made in addressing the two major components of the habitat challenge in the context of fisheries: (1) fishing impacts to habitats – affecting the goods and services these habitats provide to society; and (2) non-fishing impacts to habitats upon which fisheries productivity depends. We then propose some practical steps that we in the fisheries community can take to further advance the integration of habitat considerations into ecosystem-based management. NOAA's Habitat Blueprint provides the forward-looking framework for achieving these steps. It is designed to help NOAA think and act strategically across programs and with partner organizations to

increase the effectiveness of our efforts to improve habitat conditions for coastal and marine life, including fisheries species, thereby providing economic, cultural, and environmental benefits to our society.

Progress to date:

In 1996, the Sustainable Fisheries Act added the “essential fish habitat” (EFH) provisions to the Magnuson-Stevens Fishery Conservation and Management Act (MSA). These provisions require NOAA Fisheries and Councils to identify and describe essential fish habitat and minimize, to the extent practicable the adverse effects on such habitat caused by fishing. The provisions were added in recognition that degradation of fish habitat threatened many of our nation’s fisheries stocks and that habitat conservation should be used as a tool to achieve sustainable fisheries. Since 1996, NOAA Fisheries and the Councils have made significant strides in identifying, protecting, and restoring fisheries habitat, including identifying EFH for multiple life stages of more than 1,000 species of federally managed fishes and designating over 100 Habitat Areas of Particular Concern (HAPCs). The regular five year reviews of EFH and HAPC designations that have begun to be implemented by the Councils are serving a key role in moving toward adaptive management that uses the best available scientific information.

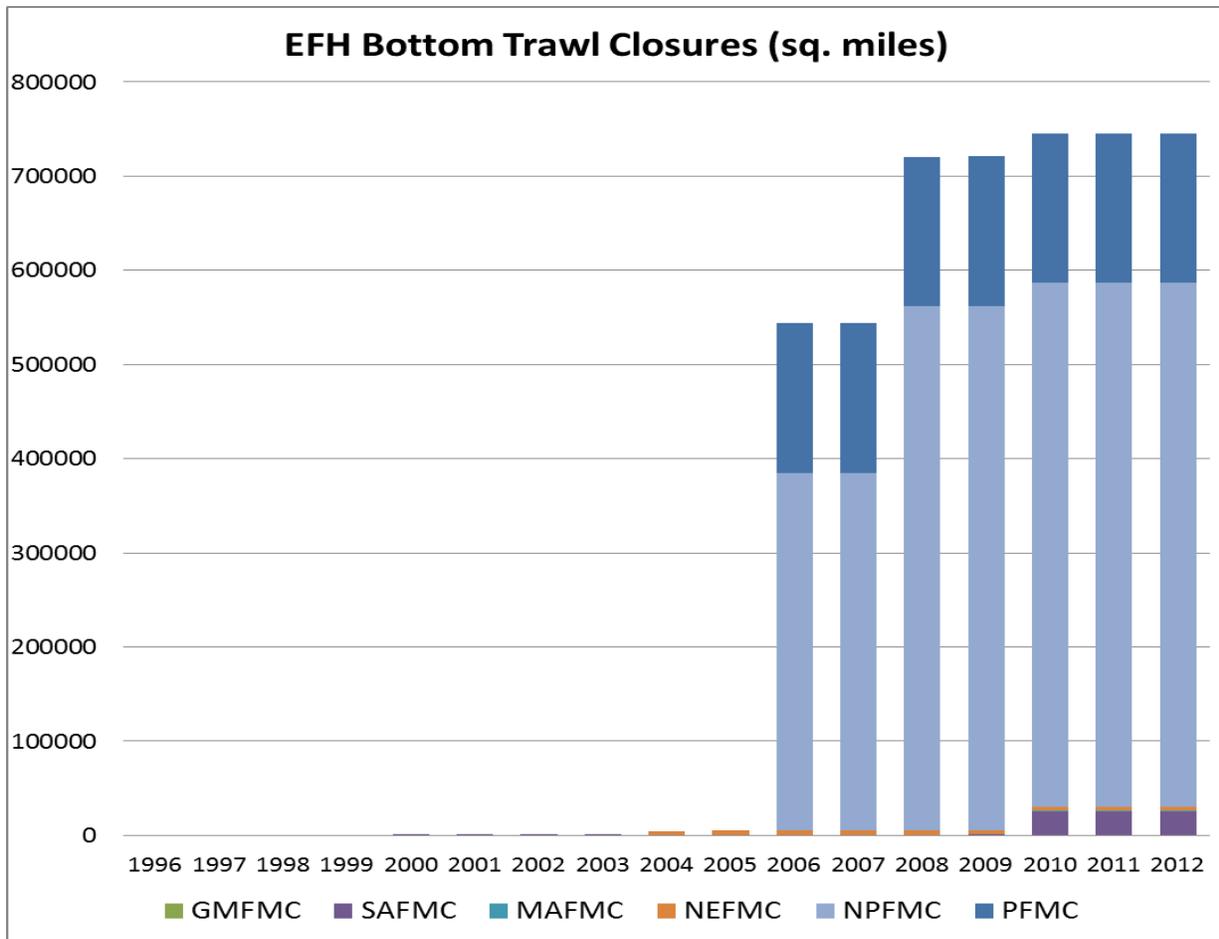
Fishing Impacts:

Beginning around 2005, the Councils used their MSA EFH authorities, to develop region-wide approaches to habitat conservation on a scale commensurate with ecosystem management. These actions have made the United States a world leader in protecting vulnerable benthic habitats from the adverse impacts of certain fishing gears. Key approaches were pioneered by the North Pacific and Pacific Fishery Management Councils and became effective in 2006, ten years after the EFH legislation. These actions relied primarily on closing areas to bottom trawling – the fishing activity deemed the most likely to damage benthic habitats (Fig. 1).

Topographic features such as ridge systems (e.g., Bowers Ridge and Mendocino Ridge), portions of undersea canyons (e.g., Monterey Canyon), and banks (e.g., Heceta Bank) were protected from bottom trawling. Such habitats are often associated with hard substrata known to be colonized by corals, sponges, and other fauna. Certain habitats deemed particularly vulnerable, such as deep-sea coral “gardens” in the Aleutian Islands and seamounts in the Gulf of Alaska and off the West Coast, received a higher level of protection and were closed to all bottom-contact gear (bottom trawls, pots, and bottom-set long-lines and gill-nets).

A particularly innovative aspect of the measures recommended by both Councils was to apply a precautionary management approach prohibiting the use of bottom trawl fishing gear in deeper areas where such gear had not yet been heavily used, while allowing historically-fished areas to remain open to such fishing. This approach to “freeze the footprint” of bottom trawling was designed to allow existing fisheries to thrive, while preventing expansion into unsurveyed areas that might contain deepwater corals, sponges, and other vulnerable hard-bottom habitats. This approach was exemplified by the Aleutian Islands Habitat Conservation Area, which covered nearly 370,000 square miles and represents the largest single effort to conserve relatively undisturbed bottom habitats in U.S. waters.

Figure 1. Marine benthic essential fish habitat areas protected from impacts of bottom-trawl fishing gear. The figure shows the cumulative area in square miles protected by NOAA Fisheries and the Fishery Management Councils since the 1996 Sustainable Fisheries Act. (*Note: The Western Pacific Fishery Management Council protected the entire exclusive economic zone under its jurisdiction from trawling and certain other bottom-contact fishing gears in the early 1980s, prior to the EFH amendments. Bottom-trawling does not occur in the Caribbean Council region. In addition to these EFH-specific closures, there are additional closures in place to reduce gear conflicts and other purposes, which also benefit habitat conservation.*)



Such ecosystem-scale habitat measures, blending targeted protection with a precautionary approach, have since been applied by the North Pacific Council in the Bering Sea and by the South Atlantic Council in protecting snapper-grouper habitats and over 24,000 square miles of deep-water Coral Habitat Areas of Particular Concern. A similar approach is being considered by the Mid-Atlantic and New England Councils.

Non-Fishing Impacts:

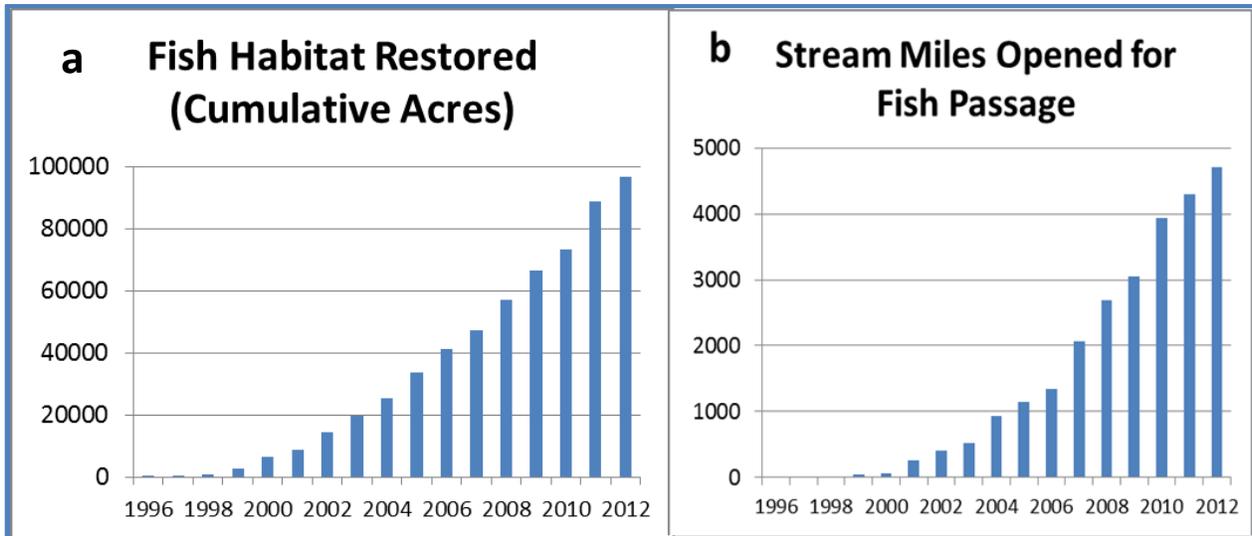
Addressing the fishing impacts to EFH in Federal waters is fully under the authority of NOAA Fisheries and the Councils. In contrast, the primary responsibility for protecting and restoring EFH degraded or destroyed by non-fishing threats most often lies with other agencies, often

multiple agencies at the state and Federal level. Nearshore, estuarine, and riverine habitats are also subject to a greater number and variety of impacts than are offshore habitats, adding complexity to the decision-making process and making conservation progress more difficult to measure.

Despite these constraints, we are convinced that NOAA's efforts have had a significant impact on improving habitat for fisheries species. Endangered Species Act and EFH consultations with other federal agencies are an important tool to address non-fishing impacts. In 2012, NOAA Fisheries was able to reduce or avert impacts to 364,000 acres of habitat through its EFH consultation authority. In many cases, through reviewing permit processes and hydropower licensing, consultations have resulted in revisions to originally-proposed actions that have reduced, averted or mitigated negative impacts to habitats. For example, NOAA Fisheries has used the EFH consultation process to influence plans for proposed open-loop liquefied natural gas facilities in some of the most biologically productive areas in the Gulf of Mexico marine ecosystem. These open-loop facilities draw in large volumes of seawater to regassify the liquid natural gas, potentially putting at risk commercially and recreationally valuable fish like snapper and red drum, as well as the organisms on which they feed. NOAA's consultations and the engagement of the fisheries and environmental communities have resulted in the redesign of several facilities to closed-loop systems to avoid entrainment and impingement of marine organisms. In another example, based on advice from NOAA Fisheries and the New England Fishery Management Council, in 2010 the U.S. Army Corps of Engineers denied a permit requested by the Commonwealth of Massachusetts to use 500,000 cubic yards of sand and gravel from a 103-acre offshore site in Massachusetts Bay for erosion control on Winthrop Beach. The material would have been removed from an area of the Bay designated as essential fish habitat for 26 federally managed species, including valuable Atlantic cod. NOAA advised the Corps on alternative sources of material that would avoid the negative impacts of the proposed project and helped to support cod recovery efforts in Massachusetts.

NOAA also conducts habitat restoration targeted at improving habitat for fisheries species. On the restoration front, NOAA has restored nearly 100,000 acres of coastal, marine and Great lakes habitat since 1996 (Fig. 2a). This includes 69,000 acres of habitat through 2,300 community-based restoration projects and 8,000 acres of coastal wetlands in Louisiana. Through our work, more than 200 dams and other barriers have been removed since 1998, opening up more than 4,000 stream miles for fish passage (Fig. 2b).

Figure 2. Fish habitat restored through NOAA Fisheries-led activities since the 1996 Sustainable Fisheries Act. (a) Cumulative area in acres of coastal, marine and Great lakes habitat restored. (b) Cumulative miles of streams opened for fish passage.



Unfinished work and new challenges:

Despite this progress, habitats essential for sustainable fisheries are still at risk. Estuaries support fish and shellfish species that comprised approximately 46% by weight and 68% by value of the U.S. commercial catch landed nationwide from 2000 through 2004 and approximately 80% of the U.S. recreational landings over the same period (Lellis-Dibble et al. 2008). Yet 53% of the estuaries (by area) in the lower 48 states are considered at high or very high risk of current habitat degradation (National Fish Habitat Board, 2010). Between 2004 and 2009, marine and estuarine intertidal wetlands declined by an estimated 84,100 acres (Dahl 2011), and the loss rate of intertidal salt marshes increased to three times the previous loss rate between 1998 and 2004. Freshwater wetlands in coastal watersheds provide important habitat for anadromous marine fish such as herring and salmon, and contribute to the overall ecological function of the estuaries lower in the coastal watersheds. Yet despite an overall increase in wetlands nationally between 1998 and 2004, there was a net loss of wetlands in coastal watersheds adjacent to the Atlantic Ocean and Gulf of Mexico of more than 385,000 acres, or more than 60,000 acres per year (Stedman and Dahl 2008). The primary causes of these habitat trends range from development in upland watersheds, polluted run-off and other effects of urbanization and agriculture affecting estuaries, and coastal storms, land subsidence, sea-level rise impacting intertidal wetlands.

Up until now, the extent to which these coastal habitat trends have affected recreational and commercial fisheries has likely been masked by overfishing. Our historic success in ending overfishing may open a window on understanding the linkages between habitat and fisheries productivity. In a review of NOAA Fisheries rebuilding plans, Milazzo (2012) found that effective, lasting and well enforced controls of fishing mortality resulted in evidence of stock recovery in two-thirds of the rebuilding plans for which we have adequate data on fishing mortality and biomass levels. However, certain stocks appear to respond poorly and/or belatedly

to rebuilding measures. These include certain demersal species (Atlantic cod), many rockfish stocks, diadromous species (such as salmon), stocks in the snapper-grouper and reef fish complexes, and deep-sea species. Many of these species are known to be tightly associated with particular habitats. For these species, controlling catch and fishing effort alone is not enough, and rebuilding plans need to address other factors such as habitat that may be bottlenecks to recovery. The nation's success in addressing overfishing should allow us to better identify stocks whose recovery depends on restoring and protecting habitat.

Steps toward integrating habitat into ecosystem-based management

So where do we go from here? It seems to us that there are several practical steps that offer an opportunity to make progress. The following suggestions build on recommendations from policy groups such as the U.S. Commission on Ocean Policy (2004) and the Ecosystem Principles Advisory Panel (1999), as well as a NOAA Habitat Blueprint Symposium we sponsored at the 142nd Annual Meeting of the American Fisheries Society in August 2012.

1) Identify and delineate priority habitats in the context of their vulnerability to fishing and non-fishing impacts and their function in the larger ecosystem

NOAA and the Councils have made progress in identifying EFH, sometimes based on limited habitat data, but we have been less successful in prioritizing among habitats. If every habitat is “essential” then no habitat will get the attention needed for successful conservation. For example, our EFH consultations on non-fishing habitat impacts have been extensive (more than 4,000 per year), but often not focused on priorities most likely to achieve measurable benefits for achieving sustainable fisheries. Likewise, small and dispersed habitat protection or restoration activities will likely fail to achieve large-scale, measureable results. Focus becomes increasingly critical in a time of diminishing financial resources.

From the fisheries management standpoint, we must be explicit in the identification of those habitats where we can achieve measurable benefits that will support priority fish stocks. This effort will benefit from improved scientific information linking specific habitat improvements to fishery productivity. NOAA Fisheries has developed a Marine Fisheries Habitat Assessment Improvement Plan (NMFS 2010) that defines the agency's role in pursuing habitat science and establishes a framework to coordinate habitat research, monitoring, and assessments in support of our fishery management responsibilities. Among other goals, it is explicitly designed to reduce habitat-related uncertainty in stock assessments, support assessments of ecosystem services, and contribute to ecosystem-based fishery management and integrated ecosystem assessments. The plan deals with managed stocks and stock complexes within Fishery Management Plans, with particular focus on the 230 stocks in the Fish Stock Sustainability Index. NOAA Fisheries has also initiated a regional process to further prioritize needed habitat assessments. The process results in two prioritized lists; the first identifies specific stock assessments that are most likely to benefit from improved habitat assessments and the second identifies stocks for which habitat assessments will most advance EFH identification and conservation. The pilot process was implemented in California in 2012 (NMFS 2012), identifying a number of priority stocks in both categories. The majority of these stocks were anadromous salmon (e.g., Chinook and coho stocks) and rockfish (e.g., bocaccio, canary rockfish, and cow cod) stocks, and there was a nearly complete agreement between the priorities

for stock assessment and those for other habitat science. A similar process will be conducted in the other regions to help NOAA focus its habitat research.

However, these information gaps should not prevent us from dealing with habitat conservation problems. Fishery stakeholders agreed on this point almost ten years ago at the first Managing Our Nation's Fisheries conference (Kurland 2004). We still need to identify and act on our management priorities now, while we work to improve our science base. We also need to broaden our approach from species-by-species, to identifying habitats that benefit multiple species and those that provide additional ecosystem services that we value. In 2005, the U.S. Commission on Ocean Policy recommended that NOAA Fisheries change the designation of essential fish habitat from a species-by-species to a multispecies approach and, ultimately, to an ecosystem-based approach that includes consideration of ecologically valuable species that are not necessarily commercially important. While there is a growing body of science-based analytical methods that could support such designations, we suggest that there is already scientific and societal consensus on the importance of certain habitat types based on their contributions as fish habitat, biodiversity and ecosystem services. These include tropical coral reefs, coastal wetlands, seagrass and kelp beds, and deep-sea coral communities. This would be a practical place to start focusing our attention and, as we discuss below, will facilitate building alliances beyond the fisheries management community.

In setting geographic habitat priorities, we need to look at individual habitats in their larger seascape or watershed context. Within a given region, ecosystem-based management strives to integrate the breadth of human activities, while maintaining functioning ecosystems that can provide the services humans want and need. Therefore we must look at habitats as mosaics of patches in the larger seascape, and explicitly account for their connectivity both in terms of cumulative fisheries productivity and cumulative human impacts over multiple spatial scales.

2) Set habitat conservation objectives

Successful management depends upon translating concepts into specific objectives and measurable targets. In single species fisheries management, these targets have generally been target stock sizes that will avoid overfishing. Success in ending overfishing has benefited from a (1) focus on overfished stocks; (2) clear targets established through mandates and regulations (e.g., National Standards, determinations of maximum sustainable yield/optimum yield, allowable catch levels, accountability measures, etc.); and the ability to measure progress (i.e., through stock assessments).

In a similar manner, a key aspect of an ecosystem approach to management is developing indices of ecosystem function as targets for management (Ecosystem Principles Advisory Panel 1999). A number of authors have identified the difficulties in setting performance measures for a small selection of fisheries ecosystem metrics, however nearly all approaches identify the centrality of habitat. While in most cases, the extent and quantity of habitat that is needed to contribute to increased productivity of a particular fisheries stock, or to a "fully functioning ecosystem" cannot be determined exactly, suspected tipping points may be inferred, and prudent managers will set targets that are likely to avoid degradation.

Table 1. Selected examples of existing quantitative habitat conservation targets. (Source: NMFS 2013)

Program	Goal	Target	Reference
Chesapeake Bay Program	Restored oyster populations in priority tributaries	50-100% of restorable bottom in tributary restored.	http://www.chesapeakebay.net/
		15 to 50 oysters/m ² covering at least 30% of the reef area	
San Francisco Bay Sub-tidal Habitat Goals Project	Conserve ecosystem services provided by eelgrass beds	Protect eelgrass habitat through no net loss to existing beds (3,700 acres in 2009).	http://www.sfbaysubtidal.org/
		Increase native eelgrass within 8,000 acres of suitable intertidal/subtidal habitat	
Puget Sound Partnership	Wild Chinook salmon population recovery	10% of bluff-backed beaches with high sediment supply or priority nearshore habitat facing development pressure are protected	http://www.psp.wa.gov/

There are examples from existing habitat programs that are successfully using habitat objectives or indicators to identify habitat priorities and set management goals through their planning processes (Table 1). A variety of approaches have been used to set habitat objectives for both freshwater and marine fish species. There is a role for both qualitative and quantitative objectives and targets, and both can serve to measure progress and influence decisions about investing resources to affect a desired outcome for fisheries (NMFS 2013). However, we should strive to develop quantitative targets and measure progress to reach these targets.

Setting habitat objectives and targets that can enhance fisheries management requires understanding the ways in which habitat bottlenecks can constrain fish productivity, for example dams impacting access by diadromous fishes to spawning areas. It also requires the ability to delineate priority habitats and clearly identify their vulnerability to fishing and non-fishing impacts. While it remains a challenge to parse out specific effects of multiple human activities, particularly in nearshore and freshwater areas, there are methods that can be employed to systematically identify and prioritize the human activities that are the strongest drivers of ecosystem change (e.g., Altman et al. 2011). In most cases habitat objectives will measure the extent and quality of the habitat. As improved habitat assessments begin to yield habitat-dependent fishery productivity rates for priority habitat-dependent stocks, we will come closer to a being able to provide information to stock assessments using the same units.

3) Integrate habitat conservation explicitly into other aspects of fisheries management

Habitat conservation efforts still remain relatively separated from traditional fisheries management approaches. We need to identify and build upon the synergies between fisheries habitat objectives and other aspects of policies and processes of fisheries management.

There are immediate opportunities that NOAA Fisheries could take to incorporate habitat as the Fishery Management Councils develop ecosystem-based fishery management plans and by

working with Councils to incorporate these efforts into regional ocean planning constructs such as those under the National Ocean Plans. As another example, both the U.S. Commission on Ocean Policy (2004) and the Pew Oceans Commission (2003) Reports stressed the need to address the broad ecosystem impacts of bycatch. When considering biogenic habitats, reducing bycatch of habitat-forming organisms such as deep-sea corals and sponges translates directly into reducing impacts on priority habitats. The North Pacific Council explicitly identified the link between its 2005 Groundfish EFH amendments and the goal to minimize bycatch of benthic habitat-forming invertebrates. Strengthening both bycatch monitoring and bycatch reduction of deep-sea corals and sponges will benefit habitats and the fishes that depend upon them (NOAA 2010).

The Councils, as governing bodies which include state representatives, offer unique opportunities to strategically partner with states on specific, priority coastal and offshore habitat protection issues. The formal and consistent engagement of the Councils in consultations on non-fishing impacts to EFH can improve the conservation of habitat for commercially and recreationally important fish species (NMFS 2013). The North Pacific and Mid-Atlantic Fishery Management Councils have already used their fishery management public process for some discrete habitat conservation activities. For example, the North Pacific Fishery Management Council used the public fishery management planning process to determine priorities for establishing Habitat Areas of Particular Concern.

4) Expand partnerships and build alliances

Identifying habitat priorities, setting management objectives, and implementing management actions all require a public policy dialogue with affected stakeholders, many of which will be outside the traditional fishery management groups. In certain cases, as when the primary threats to high-value habitats in Federal waters are due to fishing impacts, the responsibility to protect these habitats rests clearly with NOAA Fisheries and the Councils. Fishery participants and managers will only have credibility with other stakeholders to the extent that we effectively address habitat impacts of our fishing activities, particularly bycatch and gear impacts. In most cases, however, both the threats and the solutions are outside the direct control of fisheries managers. In these cases we have the opportunity to find common ground with others and build alliances to protect our priority habitats.

These partnerships need to be approached from the local, watershed, state, regional, national and international level. For example, through the National Fish Habitat Partnership and its network of regional partnerships, NOAA is able to work with state and federal agencies, non-profit organizations, and fishing industry representatives towards achieving our mutual goals for fish habitat conservation using voluntary and non-regulatory approaches.

We encourage the Councils to become more actively engaged in both selected consultations that affect our identified priority habitats, as well as in other fora – e.g., regional ecosystem and marine spatial planning with an influence over activities that influence priority fisheries habitat. We should also further engage states through the interstate commissions that serve vital roles in coastal waters, estuaries, and rivers that are integral components of an ecosystem-based approach.

A Blueprint for conserving habitats and rebuilding fisheries

As we explore these and other options for integrating habitat in ecosystem-based fishery management, the primary mechanism to achieve this objective is through the NOAA “Habitat Blueprint” (NOAA 2012). This is the “lens” for how we set programmatic and operational priorities. The NOAA “Habitat Blueprint” is a forward looking framework for the agency to think and act strategically across programs and with partner organizations to address the growing challenge of coastal and marine habitat loss and degradation. It is a centerpiece in our efforts both to integrate habitat into ecosystem-based management and to strengthen the partnerships that will benefit from the conservation of habitats important to fisheries. These efforts are expected to yield benefits for marine fisheries, as well as for protected resources and coastal communities. Many of the themes mentioned above are mirrored in the guiding principles of the Blueprint:

- Prioritize resources and activities across NOAA to improve habitat conditions;
- Implement innovative place-based habitat solutions to address coastal and marine resource challenges;
- Make natural resource management decisions and recommendations in an ecosystem context that considers competing priorities;
- Foster and leverage partnerships;
- Integrate and improve the delivery of habitat science across disciplines to facilitate conservation actions; and
- Anticipate and address changes to coastal and ocean habitats due to development, climate, and other pressures.

These guiding principles are being executed through three primary approaches: 1) establishing Habitat Focus Areas; 2) implementing a systematic and strategic approach to habitat science; and 3) strengthening policy and legislation. Through these Blueprint approaches we aim to better integrate habitat considerations into NOAA’s management activities in order to achieve the multiple outcomes of sustainable and abundant fish populations, recovered threatened and endangered species, and resilient coastal communities. The concepts we are proposing in this paper are key to achieving these goals.

We are currently selecting Habitat Focus Areas in each of NOAA’s regions. The goal of establishing these Focus Areas is to prioritize long-term habitat science and conservation efforts, and concentrate resources in a place where by working collaboratively we can achieve measurable benefits for marine resources and coastal communities in a three to five year timeframe. The first Habitat Focus Area has already been selected, the Russian River watershed in California, and others will be established across the country over the coming year.

The science approach of the Blueprint is strengthening the linkages between habitat science and decision-making needs. We are prioritizing our research and using a more integrative approach for planning and conducting quality habitat science. The concept of ecosystem services provides a common denominator for prioritizing habitats and building partnerships. This will enable us to address the greatest needs and ensure that the information necessary to incorporate habitat into ecosystem-based fisheries management is in place.

The NOAA “Habitat Blueprint” challenges us to better use NOAA’s habitat conservation authorities in the MSA to achieve sustainable fisheries. To do so we will explore the development of habitat conservation objectives for fisheries management and develop policies that better integrate habitat considerations into fisheries management decisions. This will involve a culture change within NOAA Fisheries, challenging us to become a nimble, dynamic and cohesive organization to achieve the tenets of the Blueprint, partnering more across NOAA and with other federal agencies.

Conclusions:

The 3rd Conference on Managing our Nation’s Fisheries offers an important forum to discuss these and other steps that could further integrate habitat considerations into existing fishery management efforts, and integrate fisheries (and fisheries habitat) into broader ecosystem-based management. While we believe that many of the steps outlined above can be accomplished within existing legislative authorities, we are also interested in beginning a dialog on areas where additional authorities might benefit our habitat and fisheries goals.

With the Blueprint as our framework, NOAA Fisheries is committed to working together with the Councils and other partners to protect and restore habitats that support vibrant fisheries and coastal communities. If we are successful, improved geographic focus, clearly defined habitat objectives, improved integration with mainline fisheries management and expanded partnerships will provide a number of benefits:

- Protection of the most important habitats from fishing impacts and more targeted and effective agency conservation recommendations for non-fishing impacts;
- Councils that are better able to determine when to engage in consultations on non-fishing impacts to habitats essential for priority stocks;
- Direction in establishing Habitat Areas of Particular Concern;
- Focus for NOAA’s habitat research;
- Increased effectiveness of our habitat conservation programs to rebuild and maintain sustainable fisheries;
- Clearer opportunities to partner with states and others proactively on shared habitat conservation needs, including those related to fisheries managed by interstate commissions; and
- Focus for decisions on funding opportunities related to habitat restoration, stock dynamics, socio-economics, and other NOAA Fisheries programs with benefits to our MSA mandates or our state partnerships.

Over the last ten years, NOAA Fisheries and the Regional Fishery Management Councils have made significant progress in addressing overfishing and the adverse impacts of fishing gear on vulnerable benthic habitats. The stage is set to consolidate these gains and further incorporate habitat into the nation’s goal of adopting ecosystem-based management as a foundational principle for the comprehensive management of the ocean, our coasts, and the Great Lakes.

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