AGENDA C-1
December 2008

MEMORANDUM

TO: Council, SSC and AP Members

FROM: Chris Oliver
Executive Director

ESTIMATED TIME
3 HOURS

DATE: December 2, 2008

SUBJECT: MPA Nomination Process

ACTION REQUIRED

Receive report from MPA Center on nomination process for MPAs

BACKGROUND

Back in 2000, President Clinton signed Executive Order 13158, which requires NOAA to establish a Marine Protected Area Center to develop a framework for a national system of marine protected areas (MPAs). The executive order is attached as Item C-1(a). In March 2008, the MPA Center published a draft framework for developing a national system of MPAs, and we provided comments (Item C-1(b)) as well as a follow-up letter to NMFS (Item C-1(c)). In late November, the final framework was published on the MPA Center's website (www.mpa.gov).

Dr. Joe Uravich, Director of the MPA Center, will be presenting information about the National System of MPAs and the nomination process for the incorporation of existing MPAs, into the national system. Summary information on the framework and nomination process is attached (Item C-1(d)). The way the fishery management council related process is presently supposed to work is as follows:

> The National MPA Center provides NMFS HQ with all the regional sets of sites. These are existing sites that a) meet the definition of an MPA as defined Executive Order 13158 and b) have a management plan. These are the first two filters. NMFS HQ provides them to the regions, and the regions provide them to the FMCs. These will be discussed and voted on by the FMCs over the next 2 or 3 council meetings. The MPA Center is asking the FMCs and the regions to determine a) which sites meet which Priority Conservation Objectives in the national system framework, and b) which sites will be officially nominated for inclusion. The FMC makes its recommendations to the region and the region sends its determination to the MPA Center. The MPA Center publishes the proposed nominations in the Federal Register (and by other means) for public comment. The public provides comment to the managing agency. Agencies review public comment. Accepted MPAs are placed by the MPA Center on the official "List of MPAs" called for by E.O. 13158.

A letter with the set of potential MPA sites for the Northern Pacific is expected to arrive from NMFS HQ by the Council meeting. Dr. Uravich is available to talk about the nomination process and to answer questions. The MPA Center will not be asking the Council to take an official action at this meeting.

In a related topic, the National Marine Sanctuaries Act is likely to be reauthorized next year. A comparison of the nomination process and the Council authorities of the MPA framework and the Sanctuary Act is provided as Item C-1(e).

Presidential Documents

Executive Order 13158 of May 26, 2000

Marine Protected Areas

By the authority vested in me as President by the Constitution and the laws of the United States of America and in furtherance of the purposes of the National Marine Sanctuaries Act (16 U.S.C. 1431 *et seq.*), National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-ee), National Park Service Organic Act (16 U.S.C. 1 *et seq.*), National Historic Preservation Act (16 U.S.C. 470 *et seq.*), Wilderness Act (16 U.S.C. 1131 *et seq.*), Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 *et seq.*), Coastal Zone Management Act (16 U.S.C. 1451 *et seq.*), Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), Marine Mammal Protection Act (16 U.S.C. 1362 *et seq.*), Clean Water Act of 1977 (33 U.S.C. 1251 *et seq.*), National Environmental Policy Act, as amended (42 U.S.C. 4321 *et seq.*), Outer Continental Shelf Lands Act (42 U.S.C. 1331 *et seq.*), and other pertinent statutes, it is ordered as follows:

Section 1. *Purpose.* This Executive Order will help protect the significant natural and cultural resources within the marine environment for the benefit of present and future generations by strengthening and expanding the Nation's system of marine protected areas (MPAs). An expanded and strengthened comprehensive system of marine protected areas throughout the marine environment would enhance the conservation of our Nation's natural and cultural marine heritage and the ecologically and economically sustainable use of the marine environment for future generations. To this end, the purpose of this order is to, consistent with domestic and international law: (a) strengthen the management, protection, and conservation of existing marine protected areas and establish new or expanded MPAs; (b) develop a scientifically based, comprehensive national system of MPAs representing diverse U.S. marine ecosystems, and the Nation's natural and cultural resources; and (c) avoid causing harm to MPAs through federally conducted, approved, or funded activities.

Sec. 2. *Definitions.* For the purposes of this order: (a) "Marine protected area" means any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein.

(b) "Marine environment" means those areas of coastal and ocean waters, the Great Lakes and their connecting waters, and submerged lands thereunder, over which the United States exercises jurisdiction, consistent with international law.

(c) The term "United States" includes the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

Sec. 3. *MPA Establishment, Protection, and Management.* Each Federal agency whose authorities provide for the establishment or management of MPAs shall take appropriate actions to enhance or expand protection of existing MPAs and establish or recommend, as appropriate, new MPAs. Agencies implementing this section shall consult with the agencies identified in subsection 4(a) of this order, consistent with existing requirements.

Sec. 4. *National System of MPAs.* (a) To the extent permitted by law and subject to the availability of appropriations, the Department of Commerce and the Department of the Interior, in consultation with the Department

of Defense, the Department of State, the United States Agency for International Development, the Department of Transportation, the Environmental Protection Agency, the National Science Foundation, and other pertinent Federal agencies shall develop a national system of MPAs. They shall coordinate and share information, tools, and strategies, and provide guidance to enable and encourage the use of the following in the exercise of each agency's respective authorities to further enhance and expand protection of existing MPAs and to establish or recommend new MPAs, as appropriate:

(1) science-based identification and prioritization of natural and cultural resources for additional protection;

(2) integrated assessments of ecological linkages among MPAs, including ecological reserves in which consumptive uses of resources are prohibited, to provide synergistic benefits;

(3) a biological assessment of the minimum area where consumptive uses would be prohibited that is necessary to preserve representative habitats in different geographic areas of the marine environment;

(4) an assessment of threats and gaps in levels of protection currently afforded to natural and cultural resources, as appropriate;

(5) practical, science-based criteria and protocols for monitoring and evaluating the effectiveness of MPAs;

(6) identification of emerging threats and user conflicts affecting MPAs and appropriate, practical, and equitable management solutions, including effective enforcement strategies, to eliminate or reduce such threats and conflicts;

(7) assessment of the economic effects of the preferred management solutions; and

(8) identification of opportunities to improve linkages with, and technical assistance to, international marine protected area programs.

(b) In carrying out the requirements of section 4 of this order, the Department of Commerce and the Department of the Interior shall consult with those States that contain portions of the marine environment, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands, tribes, Regional Fishery Management Councils, and other entities, as appropriate, to promote coordination of Federal, State, territorial, and tribal actions to establish and manage MPAs.

(c) In carrying out the requirements of this section, the Department of Commerce and the Department of the Interior shall seek the expert advice and recommendations of non-Federal scientists, resource managers, and other interested persons and organizations through a Marine Protected Area Federal Advisory Committee. The Committee shall be established by the Department of Commerce.

(d) The Secretary of Commerce and the Secretary of the Interior shall establish and jointly manage a website for information on MPAs and Federal agency reports required by this order. They shall also publish and maintain a list of MPAs that meet the definition of MPA for the purposes of this order.

(e) The Department of Commerce's National Oceanic and Atmospheric Administration shall establish a Marine Protected Area Center to carry out, in cooperation with the Department of the Interior, the requirements of subsection 4(a) of this order, coordinate the website established pursuant to subsection 4(d) of this order, and partner with governmental and nongovernmental entities to conduct necessary research, analysis, and exploration. The goal of the MPA Center shall be, in cooperation with the Department of the Interior, to develop a framework for a national system of MPAs, and to provide Federal, State, territorial, tribal, and local governments with the information, technologies, and strategies to support the system. This

national system framework and the work of the MPA Center is intended to support, not interfere with, agencies' independent exercise of their own existing authorities.

(f) To better protect beaches, coasts, and the marine environment from pollution, the Environmental Protection Agency (EPA), relying upon existing Clean Water Act authorities, shall expeditiously propose new science-based regulations, as necessary, to ensure appropriate levels of protection for the marine environment. Such regulations may include the identification of areas that warrant additional pollution protections and the enhancement of marine water quality standards. The EPA shall consult with the Federal agencies identified in subsection 4(a) of this order, States, territories, tribes, and the public in the development of such new regulations.

Sec. 5. *Agency Responsibilities.* Each Federal agency whose actions affect the natural or cultural resources that are protected by an MPA shall identify such actions. To the extent permitted by law and to the maximum extent practicable, each Federal agency, in taking such actions, shall avoid harm to the natural and cultural resources that are protected by an MPA. In implementing this section, each Federal agency shall refer to the MPAs identified under subsection 4(d) of this order.

Sec. 6. *Accountability.* Each Federal agency that is required to take actions under this order shall prepare and make public annually a concise description of actions taken by it in the previous year to implement the order, including a description of written comments by any person or organization stating that the agency has not complied with this order and a response to such comments by the agency.

Sec. 7. *International Law.* Federal agencies taking actions pursuant to this Executive Order must act in accordance with international law and with Presidential Proclamation 5928 of December 27, 1988, on the Territorial Sea of the United States of America, Presidential Proclamation 5030 of March 10, 1983, on the Exclusive Economic Zone of the United States of America, and Presidential Proclamation 7219 of September 2, 1999, on the Contiguous Zone of the United States.

Sec. 8. *General.* (a) Nothing in this order shall be construed as altering existing authorities regarding the establishment of Federal MPAs in areas of the marine environment subject to the jurisdiction and control of States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and Indian tribes.

(b) This order does not diminish, affect, or abrogate Indian treaty rights or United States trust responsibilities to Indian tribes.

(c) This order does not create any right or benefit, substantive or procedural, enforceable in law or equity by a party against the United States, its agencies, its officers, or any person.

THE WHITE HOUSE,
May 26, 2000.

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April 10, 2008

Mr. Joseph A. Uravitch
National MPA Center, N/ORM
1305 East-West Highway
Silver Spring, MD 20910

Dear Mr. Uravitch:

Thank you for the opportunity to review the Revised Draft Framework for Developing a National System of MPAs. On behalf of the North Pacific Council, I offer the following comments regarding two main areas of concern: (1) the nomination/delisting process and regional fishery management council authorities in that regard; and, (2) the scope of 'avoiding harm to resources protected by an MPA', and again, the regional fishery management councils' authorities in that regard. While this revised draft may be viewed as a light at the end of the tunnel, some of us fear that light may be the headlight of a train headed our way. The desire to have many of our closure areas recognized as MPAs may be outweighed by the increased regulatory burden, decreased management flexibility, and potential subjugation of our management authorities under the Magnuson-Stevens Act.

MPAs are not chosen for scenic or aesthetic value like a national park; rather, they are chosen for scientific and conservation value and their nature and function dictate a direct, ongoing Council role in their management. In that same view, we expect MPAs to play a crucial role in our ecosystem-based management approach, and therefore the Councils ability to successfully implement ecosystem-based management will be compromised if we have little or no control over MPA designation and management. One possible solution may rest in the ability to use the ecosystem planning process to describe the role of MPAs in ecosystem-based management, and consequently the Councils' role in MPA management.

We of course have discussed these concerns previously at the Council Coordination Committee meetings, but the draft framework still does not adequately describe the role and authorities of regional fisheries management councils relative to the primary concerns noted above. Relative to the nominating/delisting process, the response to comments on this very issue still does not fully answer the question of what agency makes the final determination on an MPA nomination, and where the Councils fit in the definition of 'agency'. The language contained in footnote 8 (citing the example of the "Federal Fishery Management Councils and their unique role with NMFS...") simply states that "*In these cases...the multiple managing entities shall be consulted throughout the nomination process.*" We would like to get clarification as to what happens if the Council and NMFS disagree on an MPA nomination, or if the Council wished to remove an area from MPA designation. Some previous experiences where NOAA has been required to 'consult' with the Councils have resulted in a pro-forma consultation with no meaningful Council input (see NEPA revisions pursuant to the recently reauthorized Magnuson-Stevens Act).

Virtually all potential MPAs that regulate fishing were developed by the Councils as amendments to their fishery management plans (FMPs). The Council has always maintained flexibility to make adjustments to FMPs to meet ever changing management needs, environmental conditions, and changes in fisheries. Yet

it appears that the Council may potentially lose flexibility and authority to modify MPAs (such as changing the boundary of an area once it is designated as am MPA), or eliminate MPAs from its FMPs, with the insertion of yet another layer of potentially conflicting authority.

FMP amendments and implementing regulations already undergo extensive public comment through public hearings and formally through the Federal Register. As proposed by the draft framework, an additional formal public comment process established through the MPA Center will increase administrative costs, could further delay time critical fishery regulations, and will be potentially confusing to affected stakeholders. The draft framework identifies goals and priority conservation objectives which were not explicitly set forth in the EO13158. Some of these priorities may be better addressed with tools other than MPAs, but the push to identify and implement MPAs through the national system may limit equal consideration of these other measures. MPAs may not always be the best solution, yet the NOAA MPA center will be actively promoting the designation of MPAs, which may take precedent over other possible management tools.

Implementation of each of these priority conservation objectives through establishment of MPAs could eventually create an extremely complex and overwhelming suite of areas. As we discovered when we identified essential fish habitat areas for FMP species, every spot of the ocean is essential for at least one managed species for breeding, feeding, or growth to maturity. The MPA framework goals and priorities would greatly expand the list of areas of concern. When the other MPA framework priority objectives are added in (e.g., biogenic habitats, diversity, geological features, ESA species, rare species, migratory species, education, cultural and historic sites, fishing grounds, maintaining natural age/sex structure of fish, bycatch mitigation), the potential areas for inclusion as national MPA sites becomes astronomically large – perhaps encompassing the entire U.S. EEZ at the extreme.

The Council remains very concerned about the no-harm provision. EO13158 states that "*Each Federal agency whose actions affect the natural or cultural resources that are protected by an MPA shall identify such actions. To the extent permitted by law and to the maximum extent practicable, each Federal agency, in taking such actions, shall avoid harm to the natural and cultural resources that are protected by an MPA.*" This raises a number of concerns that are not addressed in the draft framework. For example, are management agencies required to avoid harm to <u>all</u> resources protected within an MPA? Or, are the management agencies required to avoid harm to <u>all</u> resources protected by an MPA regardless of where they occur? Or, are the management agencies required to avoid harm only to the resources for which the MPA was specifically designed to protect (if the particular MPA identified these resources) <u>within</u> the MPA, or everywhere? And who makes the determination about what resources are protected by an MPA?

For example, the Bristol Bay Red King Crab Savings Area was designed to protect red king crab and their habitats by prohibiting bottom trawling and dredging year-round within most of this area. A small portion of the area is open to bottom trawling, with a limited bycatch allowance, during years of high crab abundance. This area also contains essential fish habitat for a variety of other commercially exploited resources (such as rock sole, yellowfin sole, Tanner crab, Pacific cod, and pollock), and is utilized by other biological resources not currently harvested (e.g., seastars, worms, mollusks). Therefore, the all-important question is what resources are protected by the MPA? Is it just the crab, the fish too, or all resources that may occur within the MPA? And are we required to avoid harm to these resources outside of the MPA? And, even if we assumed the simplest case of red king crab as the only resource and protection was only required within the MPA itself, who would make a determination that allowing some bottom trawling within the MPA meets the avoid harm to the maximum extent practicable threshold – NOAA or the Council?

In our case, Federal MPAs in the North Pacific were specifically designed to protect Steller Sea lions, Pacific walrus, red king crab, blue king crab, Tanner crab, snow crab, pollock, Pacific halibut, Chinook

salmon, chum salmon, Pacific herring, and Primnoa corals. In addition, there are MPAs that are designed to protect all the resources within it. For example, what specific resources are protected by the MPAs that include the seamounts, the Sitka pinnacles, other MPAs established to conserve essential fish habitat? Who makes that determination?

The draft framework says that the meaning of terms such as "avoid harm" and "extent practicable", are dependent upon the agency's interpretation. Further, the draft framework says that the determination of whether an agency, in taking such actions, is avoiding harm to those resources, to the extent permitted by law and to the maximum extent practicable, will be made by the individual agency using its existing review process and authorities. So, for the initial nomination of existing MPAs, does that mean NOAA or the Council would need to prepare additional analyses to evaluate if, in fact, federally authorized activities (e.g, fisheries) avoid harm to the resources to the extent permitted by law and to the maximum extent practicable?

As you note in the Environmental Assessment document prepared for the draft framework, MPAs are a contentious subject, and it is likely that NMFS and/or the Regional Fishery Management Councils will be challenged on every decision point in the MPA nomination and evaluation process. Without further clarification of these overlapping (or conflicting) authorities, we see a potential train wreck coming, and the potential for endless litigation over the nominations and the avoid harm provisions. We urge that clarification of the process and authorities be made as soon as possible, and be included in the revised framework.

Sincerely,

Chris Oliver
Executive Director

CC: Mr. Doug Mecum
Dr. Jack Dunnigan
Dr. James Balsiger
Council Executive Directors

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June 27, 2008

Mr. Alan Risenhoover
National Marine Fisheries Service
1305 East-West Highway
Silver Spring, MD 20910

Dear Alan:

I received your email with the Q&A attachment from the MPA Center regarding the concerns about the Revised Draft MPA Framework that were raised by the regional fisheries management councils. The North Pacific Council reviewed the Q&A document at its meeting last week and asked me to respond on their behalf. Although the Council appreciates the prompt response by the MPA Center, the Q&A document does not adequately address all of the concerns we raised in our previous letter (attached). Nor did our recent CCC teleconference, which included MPA Center representatives, fully alleviate our primary concerns.

The Q&A document, and our subsequent teleconference, clarified several aspects of the 'avoid harm' provision, noting that the resources protected by an MPA are defined as resources specific to that MPA and that resources not present in an MPA are not protected and thus not affected by the requirement. So, taking the simplest example of the Red King Crab Savings Area discussed in our previous letter, if the area was designated as an MPA, agencies would only be required to avoid harm to red king crab, and only within the Red King Crab Savings Area. Not all potential MPAs are easily categorized, however. In our region, the Council has developed a number of areas designed to protect ecosystems and habitat for a wide variety of species (see Witherell and Woodby 2005). Deciding what resources are protected by these MPAs could be very contentious. So again, we ask *who makes the determination about what resources are protected by an MPA?* Will the decision regarding what resources are protected by these MPAs be made by the Councils, or by NOAA with some form of consultation with the Councils? In the latter case, and given our recent experiences with consultation on the NEPA rulemaking, we remain concerned about the level of meaningful consultation with the Councils.

Another question we raised in our first letter was the need for a re-evaluation of MPAs during the initial listing process to ensure that actions (e.g., allowing fisheries) achieve the 'avoid harm' threshold. Because these areas were originally developed for fishery management purposes under the Magnuson-Stevens Act, the requirement to avoid harm to the resources to the extent practicable is new and untested in court. The draft framework says that the determination of whether an agency, in taking such actions, is avoiding harm to those resources to the extent permitted by law and to the maximum extent practicable, will be made by the individual agency using its existing review process and authorities. But the framework is silent on what to do with the initial list of MPAs. The pressing question is, "*Will NOAA or the Council need to prepare additional analyses to evaluate if, in fact, federally authorized activities (e.g, fisheries) avoid harm to the resources to the extent permitted by law and to the maximum extent practicable?*"

The other primary concern we raised had to do with the actual listing or de-listing of areas designated as MPAs. When pressed on the question of who makes this determination during our recent teleconference, the response was that this is not specified in the framework document, and it would be "jointly determined by NOAA Fisheries and the appropriate Council". We remain concerned about this undefined aspect of the framework process, for reasons similar to those stated above regarding the role of the Council and what level of meaningful consultation will be engaged.

We generally remain very concerned with the potential for litigation resulting from the draft framework, and we continue to urge that clarification of the process and authorities be made as soon as possible, and be included in a revised framework.

Sincerely,

Chris Oliver
Executive Director

CC: Mr. Doug Mecum
Dr. Joe Uravitch
Dr. Jack Dunnigan
Dr. James Balsiger
Council Executive Directors

Witherell, D., and D. Woodby. 2005. Application of marine protected areas for sustainable production and marine biodiversity off Alaska. *Marine Fisheries Review 67(1)1-27.*

Q & As for Council Coordinating Committee
May 27, 2008

The Q&As below were developed based on questions about the national system of MPAs at the recent Council Coordinating Committee. Other questions that were submitted as public comments will be addressed in more detail through the response to public comments process.

Q: How will the national system benefit the Fishery Management Councils?

The national system provides a framework for national and regional coordination of MPAs across all levels of government and for a wide range of purposes. Executive Order 13158 makes clear that "the national system framework and the work of the MPA Center is intended to support, not interfere with, agencies' independent exercise of their own existing authorities." It is a tool that will allow us to understand and enhance our collective place-based marine conservation efforts by providing a focus on common goals and objectives defined through a public process. In addition, it provides for a transparent, science-based, public process to conduct future regional gap analyses to identify areas in the ocean and Great Lakes where additional place-based protection may be needed to achieve the priority conservation objectives of the system. This information will then be available to inform planning by fishery managers to address these gaps, providing a more comprehensive alternative to the current, often ad hoc approach to ocean management.

The national system also provides an opportunity to build better understanding and public support for the ways in which areas under Council and NOAA management contribute to regional ecosystem based management efforts. It will also help build institutional linkages among MPAs and management agencies across all levels of government and ranges of jurisdiction with common or complementary conservation objectives.

Q: Does the "avoid harm" provision of the national system apply to all resources within the MPA?

Section 5 of Executive Order 13158 states: "Each federal agency whose actions affect the natural or cultural resources that are protected by an MPA shall identify such actions. To the extent permitted by law and to the maximum extent practicable, each Federal agency, in taking such actions, shall avoid harm to the natural and cultural resources that are protected by an MPA." Section 5 specifically refers to "resources that are protected by an MPA," meaning those resources that are protected by legislation or regulation specific to that MPA. Resources present in an MPA that are not protected by law or regulation would not be affected by this requirement. As an historical note, this specific language was developed by NMFS in 2000 in order to clarify that fishery resources that are not protected by an MPA could not be regulated under the "avoid harm" provision. For example, if the Minerals Management Service planned to issue an energy lease within a permanent seasonal closure to protect fishery spawning areas, they would be required to avoid harm to those fishery resources "to the extent permitted by law and to the maximum extent practicable." However, if the planned lease had impacts on benthic

resources not protected by the closure, the avoid harm provision would not apply. In this example, MMS, not NOAA, would make this determination, as each federal agency is responsible for its own implementation of responsibilities to avoid harm.

Q: If an MPA becomes part of the national system, what happens if its current protections change (are either reduced or expanded)? Does it need to go through the nomination process again?

Participation in the national system does not constrain the management agency from changing its management of the MPA. It would still have the ability, within its own authorities and required processes, to add or reduce levels of protection or change the size of the MPA. If the MPA ceased to exist, no longer met the national system MPA eligibility criteria, or the management agency wished to withdraw, it would be removed from the national system.

To become part of the national system, an MPA must meet the following criteria:

- meet the definition of an MPA
- address at least one priority conservation objective (listed in the Revised Draft Framework)
- have a management plan (this is being interpreted fairly broadly as having specified conservation goals and a process or requirement for monitoring and evaluation of goals)

The MPA Center plans to prepare draft lists of eligible sites based on information from the MPA Inventory and other sources. These lists will be prepared on a regional basis, using input from regional expert workshops to identify habitat areas and co-located MPAs that contribute to priority conservation objectives.

The draft regional lists of eligible sites will then be reviewed by their management agencies, which will make the decision about whether to nominate their MPAs to the national system. If the size or scope of the MPA was changed, the managing agency would be asked to update the MPA Inventory to reflect these changes, but no additional nomination process would be required.

Q: What is the role of the Councils in nominating sites to the national system?

The Councils will be a key partner to NOAA in nominating sites to the national system. Through a transparent process, NOAA will consult with its Council partners and fully consider the views and interests of the Councils prior to nominating a site to the national system. These NOAA-Council consultations would take place at the Regional-level at key stages of the nominating process, and NOAA's National Marine Fisheries Service would make final decisions on nominations.

Q: How will the conservation gap analysis be used? Will the MPA Center use this to designate new sites?

The Revised Draft Framework envisions that a rigorous and comprehensive gap analysis will follow the initial identification of eligible, existing MPAs within each region. This gap analysis will be a transparent, collaborative, science-based process at the regional scale involving "MPA related and other agencies at various levels of government, FMCs, and other organizations and institutions in synthesizing and analyzing existing information and established conservation priorities." It will also include an opportunity for public comment. The resulting regional gap analyses will be publicly available, serving as a resource for agencies and stakeholders to guide the development of new MPAs or alternative management tools. The MPA Center has no authority to modify or establish MPAs; any actions taken to create new MPAs or alter existing MPAs, based on the gap analysis will occur under existing federal, state, tribal or local authorities and the review processes they require.

Q: Does the current Environmental Assessment provide sufficient detail in describing the impact of the Framework?

The Environmental Assessment finds that there will be no significant impact of the Framework, which describes the coordination function of the national system. The "avoid harm" provision within the Framework is limited to existing management or review authorities and procedures. Any future federal action that might have an impact on the human environment, such as the creation of a new MPA or the expansion of an existing one, would require its own NEPA compliance process.

Application of Marine Protected Areas for Sustainable Production and Marine Biodiversity off Alaska

DAVID WITHERELL and DOUG WOODBY

Introduction

Marine protected areas (MPA's) are an important tool for managing fisheries and other human activities in the ocean. As defined by Executive Order 13158 (Clinton, 2000), a marine protected area is "any area of the marine environment that has been reserved by Federal, State, tribal, territorial, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein."

David Witherell is with the North Pacific Fishery Management Council, 605 West 4th Avenue, Anchorage, Alaska 99501 (E-mail: David.Witherell@noaa.gov). Doug Woodby is with the Alaska Department of Fish and Game, Commercial Fisheries Division, 1255 W. 8th Street, Juneau, Alaska 99801 (E-mail: Doug_Woodby@fishgame.state.ak.us).

ABSTRACT—Fisheries managers have established many marine protected areas (MPA's) in the Federal and state waters off Alaska to protect ecological structure and function, establish control sites for scientific research studies, conserve benthic habitat, protect vulnerable stocks, and protect cultural resources. Many MPA's achieve multiple objectives. Over 40 named MPA's, many of which include several sites, encompass virtually all Federal waters off Alaska and most of the state waters where commercial fisheries occur. All of the MPA's include measures to prohibit a particular fishery or gear type (particularly bottom trawls) on a seasonal or year-round basis, and several MPA's prohibit virtually all commercial fishing. Although the effectiveness of MPA's is difficult to evaluate on an individual basis, as a group they are an important component of the management program for sustainable fisheries and conserving marine biodiversity off Alaska.

MPA's have been established to meet several goals, including conservation of biodiversity and habitat, increased scientific knowledge, educational opportunities, enhancement of recreational activities, maintenance of ecosystem services, protection of cultural heritage, and managing fisheries (National Research Council, 2001; Marine Protected Areas Federal Advisory Committee, 2005). For fisheries management, marine protected areas have been implemented to control exploitation rates of target species, protect spawning and nursery areas, improve sustainable yields, reduce bycatch of nontarget species, protect benthic habitat from perturbations due to fishing gear, ensure against uncertainties, conserve genetic diversity, or to achieve other objectives (National Research Council, 2001). MPA's are a critical element of ecosystem-based fishery management, which is being developed and promoted as the new approach to managing fisheries in the United States and elsewhere (Pikitch et al., 2004; Fluharty, 2005; Hoff et al., 2005).

Regional fishery management councils, established under the Magnuson-Stevens Fishery Conservation and Management Act, have the primary authority to develop marine protected areas that restrict fishing in Federal waters (5.6–370 km, or 3–200 n.mi. from the shoreline) of the United States. Regulations developed by the councils are subject to approval by NOAA's National Marine Fisheries Service (NMFS), acting on behalf of the Secretary of Commerce, before they can be implemented. NMFS can also restrict fishing activities if actions taken by a regional council are insufficient to meet legal requirements for fisheries management. The International Pacific Halibut Commission has authority to enact conservation measures, including MPA's, for the Pacific halibut, *Hippoglossus stenolepis*, fishery. States can also develop MPA's in Federal waters to restrict activities of fisheries managed by the state and for those fisheries not subject to approved Federal fishery management plans.

Restrictions on fishing in state waters of Alaska (0–5.6 km or 0–3 n.mi. of the shoreline), including closure of areas to certain gear types or harvest of particular species, are enacted by the Alaska Board of Fisheries. Establishment of no-take reserves in state waters requires action of the Alaska State legislature.

Many marine protected areas have been implemented by fishery managers in the Federal waters off Alaska, and they are an important component of the precautionary management system[1] established to provide sustainable fisheries in the Alaska region (NMFS, 2001b). These MPA's are permanently designated in the Federal fishery management plans (FMP's) and in the implementing regulations governing the crab, *Chionoecetes* spp., *Lithodes* spp., and *Paralithodes* spp.; scallop, *Patinopecten caurinus*; Pacific salmon, *Oncorhynchus* spp.;

[1]The North Pacific Fishery Management Council's precautionary management approach is to apply judicious and responsible fisheries management practices, based on sound scientific research and analysis, proactively rather than reactively, to ensure the sustainability of fishery resources and associated ecosystems for the benefit of future, as well as current, generations. The goal is to provide sound conservation of the living marine resources, provide socially and economically viable fisheries for the well-being of fishing communities, minimize human-caused threats to protected species, maintain a healthy marine resource habitat, and incorporate ecosystem-based considerations into management decisions.

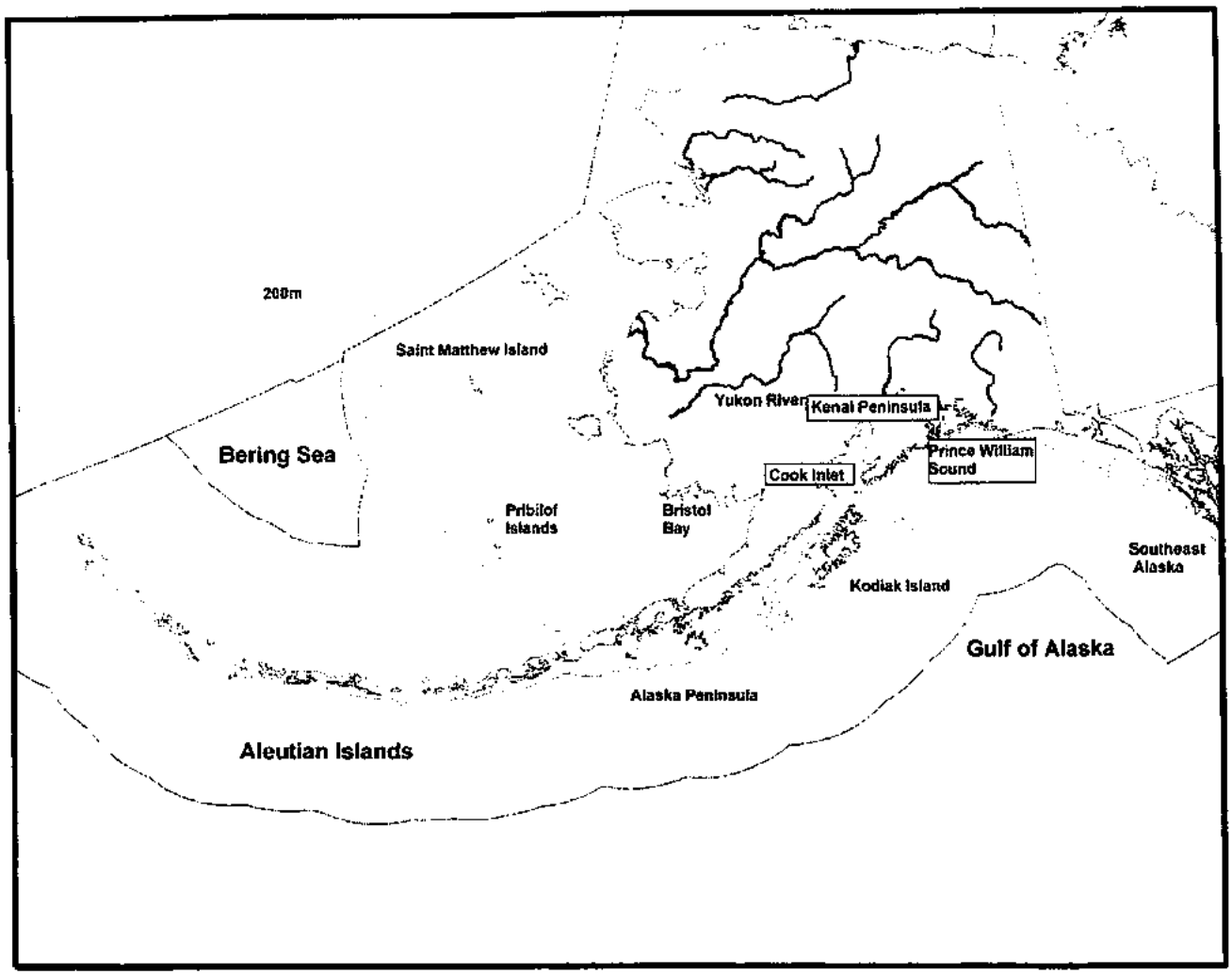

Figure 1.—Major geographic areas mentioned in the text.

and groundfish (Gadidae, Scorpaenidae, Hexagrammidae, Anoplopomatidae, and Pleuronectidae) fisheries.

State water closures to commercial fishery harvests have been enacted by the Alaska Board of Fisheries for research purposes and to conserve fish stocks, protect habitats, reduce bycatch, and provide subsistence and recreational harvest opportunities. These closures are enacted through regulations governing invertebrate dive fisheries, scallop dredge fisheries, crab pot fisheries, shrimp, *Pandalus* spp., fisheries, and various groundfish fisheries. There are also many closures affecting nearshore Pacific herring, *Clupea pallasi*, and Pacific salmon fisheries; however, these are primarily used to regulate harvests, such as prohibiting harvests in terminal areas for salmon, and are not included in this paper.

Fisheries management in the North Pacific region (Fig. 1) has generally been successful in achieving the conservation and management objectives of the Magnuson Stevens Act and is considered to be a model for other U.S. waters (U.S. Commission on Ocean Policy, 2004). Strict catch quotas for all managed target and nontarget species, coupled with an effective monitoring program, form the foundation of the Federal fishery management program. Other management measures, including MPA's, effort limitation, rights-based programs, community development programs, and protected resources considerations combine to provide a comprehensive conservation and management program (Witherell et al., 2000). As a result of these measures, sustainable production has been maintained. Annual groundfish harvests have been in the 3- to 5-billion pound range for the past 30 years (NPFMC, 2004a). Additionally, all groundfish, salmon, and scallop stocks, and most crab stocks managed by Federal FMP's, are considered to be above established minimum stock size thresholds (NMFS, 2004a).

This paper provides a comprehensive inventory and classification of MPA's in Federal waters off Alaska, a brief history of their development, and an

Table 1.—Summary MPA classification system developed by the National MPA Center (National MPA Center, 2005).

Criteria	Type	Use
Primary conservation goal	Natural heritage	Established to sustain biological communities, habitats, and ecosystems for future generations
	Cultural heritage	Established to protect submerged cultural resources
	Sustainable production	Established to support continued extraction of renewable resources
Level of protection	No access	Restricts all access into area except for research monitoring or restoration
	No impact	Prohibits all extraction, discharge, disposal, or other disturbance
	No take	Prohibits extraction of natural or cultural resources
	Zoned with no-take areas	Multiple use areas, with some areas where all extraction is prohibited
	Zoned multiple use	Allows some extractive activities throughout, but zoned to reduce some adverse impacts
	Uniform multiple use	Applies constant level of protection across entire protected area
Permanence of protection	Permanent	Legal authorities protect areas in perpetuity for future generations
	Conditional	Areas that have potential to persist over time, but legal authorities must be renewed
	Temporary	Areas that are designated for a finite duration, with no expectation of renewal
Constancy of protection	Year-round	Constant protection throughout the year
	Seasonal	Protection for only a portion of the year
	Rolling	Protection for finite duration, then de-designated and moved to another location
Scale of protection	Ecosystem	Measures intended to protect entire ecosystem or habitat within its boundaries
	Focal resource	Measures intended to protect one or more identified resources
Allowed extractive activities	No restrictions	All forms of extraction allowed
	Managed extraction	Allows extraction of resources but with regulatory restrictions within MPA
	Commercial fishing only	Prohibits all fishing except for commercial fishing
	Recreational fishing only	Prohibits all fishing except for recreational fishing
	Recreational catch-and-release fishing only	Prohibits all fishing except recreational catch and release
	Subsistence extraction only	Allows extraction of resources only for subsistence uses
	Scientific/educational fishing only	Allows extraction of resources only for scientific or educational purposes

examination of their effectiveness to date at achieving objectives. We also provide an accounting of adjacent state water MPA's for marine fisheries using the same classification scheme.

Methods

MPA's have been classified many different ways. The most recent classification system was developed by the National MPA Center, established within the National Oceanic and Atmospheric Administration. The MPA Center classifies MPA's based on six fundamental characteristics of design and management: primary conservation goal, level of protection, permanence, constancy (year-round or seasonal), scale, and allowed extractive activities as detailed in Table 1 (National MPA Center, 2005). We classified MPA's in the Federal and state waters off Alaska using this system.

Further, we categorized the MPA's based on their primary management objective. Adapting from the categories developed by Coleman et al. (2004) for Gulf of Mexico fishery MPA's, we categorized the North Pacific fishery MPA's into five groups: those primarily intended to protect ecological structure and function, establish control sites for scientific research studies, conserve habitat, protect vulnerable stocks, or protect cultural resources.

We researched the history and development of marine protected areas by examining available literature and reviewing the analytical reports and meeting records of the North Pacific Fishery Management Council (Council) and the Alaska Board of Fisheries. Additionally, we augmented these reports and records with personal observations (Witherell) as an analyst for the Council. We evaluated the effectiveness of the MPA's from a conservation perspective by examining available reports and reviewing the most recent information (biomass trends, trends in year-class strength) on the status of the stocks, including nontarget species (e.g. NPFMC, 2004b, 2004c, 2004d).

Based on the MPA Center criteria, MPA's are not included here if they were closed primarily to avoid fishing gear conflicts or if area-based regulations were established solely to limit fisheries by quota management or to facilitate enforcement. These include areas designated for testing trawl gear, regulatory areas and subareas, TAC allocation areas, harvest limit areas, sector allocation areas, and other types of designated marine managed areas. These sites may not meet the MPA definition of Executive Order 13158 in that they do not provide "lasting protection" for the natural or cultural resources.

Results

Area closures have long been used as a fishery management tool off Alaska, and the application of MPA's (the current term for area closures) has evolved to meet changing management needs. Beginning in 1939, trawling for red king crab, *Paralithodes camtschaticus*, was prohibited in Cook Inlet and all waters east of long. 150°W to limit the catch of red king crab and Pacific halibut taken by foreign trawl fleets. Later, in 1961, Japan established a no-trawl zone in Bristol Bay to limit interactions between its trawl fleet and its crab pot fleet. Many other MPA's were established off Alaska in subsequent years through international agreements with Japan, the Soviet Union, Republic of Korea, and Poland prior to implementation of preliminary fishery management plans in 1977 (Fredin[2]). The preliminary groundfish fishery management plans closed many areas to foreign trawling year-round and/or seasonally to protect domestic fisheries for crab, sablefish, *Anoplopoma fimbria*, and Pacific halibut from that competition. As the domestic

[2]Fredin, R. A. 1987. History of regulation of Alaska groundfish fisheries. U.S. Dep. Commer. NOAA, Natl. Mar. Fish. Serv., NWAFC Proc. Rep. 87-07, 63 p.

Table 2.— MPA inventory and management measures for fisheries in Federal and state waters off Alaska.

MPA objective and site name	Approx. size of site (n.mi.^{2})	Specific objective	Prohibited fishing activities
MPA's Primarily Intended to Protect Ecological Structure and Function			
Sitka Pinnacles Marine Reserve	3	Protect unique area	All bottom contact gear
Walrus Islands Closure Areas	800	Minimize disturbance	All groundfish fishing
Steller Sea Lion Mitigation Closures	58,000	Minimize potential competition	Pollock, cod, mackerel fisheries
Glacier Bay National Park	389	Protect park values	All fishing; some areas in phase-out
MPA's Primarily Intended to Improve Scientific Understanding			
Chiniak Gully Research Area	1,000	Provide control for fishing impact study	Pollock fishing
Southeast Alaska Dive Fishery Control Sites	45	Provide control for fishing impact study	Diving for urchins, sea cucumbers, or geoducks
MPA's Primarily Intended to Conserve Habitat			
Kodiak King Crab Protection Zones	1,500	Conserve red king crab habitat	Bottom trawling
Kodiak State Trawl Closure Areas	2,627	Conserve red king crab habitat	Bottom trawling
Cook Inlet Trawl Closure	7,000[1]	Conserve red king crab habitat	Bottom trawling
Alaska Peninsula Trawl Closure Areas	5,954	Conserve red king crab habitat	Bottom trawling
Scallop Dredge Closure Areas	12,000[1]	Conserve red king crab habitat	Dredging
Nearshore Bristol Bay Closure	19,000[1]	Conserve juvenile red king crab habitat	All trawling
Red King Crab Savings Area	4,000	Conserve red king crab adult habitat	Bottom trawling
Area 516 Seasonal Closure	4,000	Protect red king crab when molting	Bottom trawling
Pribilof Islands Habitat Conservation Area	7,000[1]	Conserve juvenile blue king crab habitat	All trawling
Southeast Alaska Trawl Closure	52,600	Protect corals and rockfish habitat	All trawling
Prince William Sound Trawl Closure Areas	1,485	Conserve benthic habitat and organisms	All trawling
Prince William Sound Groundfish Trawl Closure	4,054	Conserve benthic habitat and organisms	All groundfish bottom trawling except sablefish
Outer Kenai Peninula Groundfish Trawl Closure	1,093	Conserve benthic habitat and organisms	Bottom trawling for groundfish
St. Matthew Area Closure	331	Conserve blue king rearing habitat	All commercial fishing
Eastern Aleutian Islands Trawl Closure Areas	727	Conserve benthic habitat and organisms	All trawling
Aleutian Islands Habitat Conservation Area	277,100	Conserve essential fish habitat	Bottom trawling
Aleutian Islands Coral Habitat Protection Areas	110	Protect corals and rockfish habitat	All bottom contact gear
Gulf of Alaska Slope Habitat Conservation Areas	2,086	Conserve essential fish habitat	Bottom trawling
Gulf of Alaska Coral Habitat Protection Areas	67	Protect habitat of particular concern	All bottom contact gear in 13.5 n.mi.^{2}
Alaska Seamount Habitat Protection Areas	5,329	Protect habitat of particular concern	All bottom contact gear
Bowers Ridge Habitat Conservation Zone	5,286	Protect habitat of particular concern	Bottom trawling, dredging
MPA's Primarily Intended to Protect Vulnerable Stocks			
Commercial Salmon Fishery Prohibited Area	1,594,000	Limit mixed stock salmon fisheries	Salmon fishing with nets
Chinook Salmon Savings Areas	9,000	Control bycatch by groundfish trawlers	Trawling for pollock
Chum Salmon Savings Areas	5,000	Control bycatch by groundfish trawlers	Trawling for pollock
Halibut Longline Closure Area	36,300	Conserve juvenile halibut	Longlining for halibut
Herring Savings Areas	30,000	Control bycatch by groundfish trawlers	Trawling by target fishery
King and Tanner Crab Bycatch Limitation Zones	80,000	Control bycatch by groundfish trawlers	Trawling by target fishery
Snow Crab Bycatch Limitation Zone	90,000	Control bycatch by groundfish trawlers	Trawling by target fishery
Bogoslof Area	6,000	Conserve Aleutian Basin pollock stock	Pollock, cod, mackerel fisheries
State Waters Shrimp Trawl Fishing Closure Areas	2,022	Control bycatch and conserve shrimp stocks	Shrimp trawling
Resurrection Bay Lingcod Closure	112	Conserve Resurrection Bay lingcod stock	Lingcod fishing
Sitka Sound Lingcod Closure	243	Conserve Sitka Sound lingcod stock	Lingcod fishing
Black Rockfish Closure Areas	2,570	Conserve older black rockfish	Black rockfish fishing
Demersal Shelf Rockfish Closures	685	Conserve demersal shelf rockfish	Demersal shelf rockfish fishing
MPA's Primarily Intended to Preserve Cultural Resources			
Subsistence Crab Areas	1,500	Provide subsistence opportunities	Commercial crab fishing
Subsistence Halibut Areas	6,000	Provide subsistence opportunities	Commercial halibut fishing
Subsistence Sea Cucumber Areas	669	Provide subsistence opportunities	Commercial sea cucumber fishing

[1]Includes Federal and state water areas.

fisheries phased out the foreign fisheries in the 1980's, MPA's were primarily developed to control bycatch of species whose harvest is legally limited to other gear types (e.g. crabs can only be harvested with pot gear, but they are taken incidentally in trawl fisheries). By the 1990's, fishery managers off Alaska began to use MPA's to protect sensitive benthic habitat from the effects of mobile gear (particularly scallop dredges and bottom trawls), and to address concerns regarding potential competition with Steller sea lions, *Eumetopias jubatus*.

The current suite of MPA's developed for fisheries in the North Pacific can be categorized into several groups on the basis of the primary management objective identified. In many cases, the MPA's achieve multiple objectives, but in this study they were categorized based on their primary objective. An inventory list of the North Pacific fishery MPA's, grouped by category, is provided in Table 2. Table 3 shows how these MPA's are classified using the system developed by the National MPA Center (National MPA Center, 2005).

Details are provided for each MPA in the following sections, which are discussed by category of the primary management objective. We provide information, where available, on 1) the background and objective for the MPA, 2) the process to designate the MPA, 3) the size and location of the MPA, 4) the estimated costs to the fishing industry to implement the MPA, and 5) an examina-

Table 3.—Classification of MPA's for fisheries in Federal and state waters off Alaska.

MPA objective and site name	Primary conservation goal	Level of protection	Permanence of protection	Constancy of protection	Scale of protection	Allowed extractive activites
MPA's Primarily Intended to Protect Ecological Structure and Function						
Sitka Pinnacles Marine Reserve	Natural Heritage	No Take	Permanent	Year-round	Ecosystem	Scientific Fishing
Walrus Islands Closure Areas	Natural Heritage	Zoned With No-Take Areas	Permanent	Seasonal	Ecosystem	Scientific Fishing
Steller Sea Lion Mitigation Closures	Natural Heritage	Zoned With No-Take Areas	Permanent	Year-round/ seasonal	Ecosystem	Managed Extraction
Glacier Bay National Park	Natural Heritage	Zoned Multiple Use	Permanent	Year-round	Ecosystem	Recreational Fishing
MPA's Primarily Intended to Improve Scientific Understanding						
Chiniak Gully Research Area	Natural Heritage	Uniform Multiple Use	Temporary	Seasonal	Ecosystem	Managed Extraction
Southeast Alaska Dive Fishery Control Sites	Natural Heritage	Uniform Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
MPA's Primarily Intended to Conserve Habitat						
Kodiak King Crab Protection Zones	Sustainable Production	Zoned Multiple Use	Permanent	Year-round/ seasonal	Focal Resource	Managed Extraction
Kodiak State Trawl Closure Areas	Sustainable Production	Zoned Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
Cook Inlet Trawl Closure	Sustainable Production	Uniform Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
Alaska Peninsula Trawl Closure Areas	Sustainable Production	Zoned Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
Scallop Dredge Closure Areas	Sustainable Production	Uniform Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
Nearshore Bristol Bay Closure	Sustainable Production	Zoned Multiple Use	Permanent	Year-round	Ecosystem	Managed Extraction
Red King Crab Savings Area	Sustainable Production	Zoned Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
Area 516 Seasonal Closure	Sustainable Production	Uniform Multiple Use	Permanent	Seasonal	Focal Resource	Managed Extraction
Pribilof Islands Habitat Conservation Area	Sustainable Production	Uniform Multiple Use	Permanent	Year-round	Ecosystem	Managed Extraction
Southeast Alaska Trawl Closure	Natural Heritage	Zoned Multiple Use	Permanent	Year-round	Ecosystem	Managed Extraction
Prince William Sound Trawl Closure Areas	Sustainable Production	Zoned Multiple Use	Permanent	Year-round	Ecosystem	Managed Extraction
Prince William Sound Groundfish Trawl Closure	Sustainable Production	Zoned Multiple Use	Permanent	Year-round	Ecosystem	Managed Extraction
Outer Kenai Peninula Groundfish Trawl Closure	Sustainable Production	Zoned Multiple Use	Permanent	Year-round	Ecosystem	Managed Extraction
St. Matthew Area Closure	Sustainable Production	Uniform Multiple Use	Permanent	Year-round	Ecosystem	Subsistence Extr.
Eastern Aleutian Islands Trawl Closure Areas	Sustainable Production	Zoned Multiple Use	Permanent	Year-round	Ecosystem	Managed Extraction
Aleutian Islands Habitat Conservation Area	Natural Heritage	Zoned Multiple Use	Permanent	Year-round	Ecosystem	Managed Extraction
Aleutian Islands Coral Habitat Protection Areas	Natural Heritage	No Take	Permanent	Year-round	Ecosystem	Scientific Fishing
Gulf of Alaska Slope Habitat Conservation Areas	Natural Heritage	Uniform Multiple Use	Permanent	Year-round	Ecosystem	Managed Extraction
Gulf of Alaska Coral Habitat Protection Areas	Natural Heritage	Zoned With No-Take Areas	Permanent	Year-round	Ecosystem	Managed Extraction
Alaska Seamount Habitat Protection Areas	Natural Heritage	No Take	Permanent	Year-round	Ecosystem	Scientific Fishing
Bowers Ridge Habitat Conservation Zone	Natural Heritage	Zoned Multiple Use	Permanent	Year-round	Ecosystem	Managed Extraction
MPA's Primarily Intended to Protect Vulnerable Stocks						
Commercial Salmon Fishary Prohibited Area	Sustainable Production	Uniform Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
Chinook Salmon Savings Areas	Sustainable Production	Uniform Multiple Use	Permanent	Seasonal Trigger	Focal Resource	Managed Extraction
Chum Salmon Savings Areas	Sustainable Production	Uniform Multiple Use	Permanent	Seasonal & Trigger	Focal Resource	Managed Extraction
Halibut Longline Closure Area	Sustainable Production	Uniform Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
Herring Savings Areas	Sustainable Production	Uniform Multiple Use	Permanent	Seasonal Trigger	Focal Resource	Managed Extraction
King and Tanner Crab Bycatch Limitation Zones	Sustainable Production	Zoned Multiple Use	Permanent	Seasonal Trigger	Focal Resource	Managed Extraction
Snow Crab Bycatch Limitation Zone	Sustainable Production	Uniform Multiple Use	Permanent	Seasonal Trigger	Focal Resource	Managed Extraction
Bogoslof Area	Sustainable Production	Uniform Multiple Use	Permanent	Year-round	Ecosystem	Managed Extraction
State Waters Shrimp Trawl Fishing Closure Areas	Sustainable Production	Uniform Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
Resurrection Bay Lingcod Closure	Sustainable Production	Uniform Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
Sitka Sound Lingcod Closure	Sustainable Production	Uniform Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
Black Rockfish Closure Areas	Sustainable Production	Uniform Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
Demersal Shelf Rockfish Closures	Sustainable Production	Uniform Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
MPA's Primarily Intended to Preserve Cultural Resources						
Subsistence Crab Areas	Cultural Heritage	Uniform Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
Subsistence Halibut Areas	Cultural Heritage	Uniform Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction
Subsistence Sea Cucumber Areas	Cultural Heritage	Uniform Multiple Use	Permanent	Year-round	Focal Resource	Managed Extraction

[1]Includes Federal and state water areas.

tion of how well the MPA has achieved its objectives to date.

Ecosystem MPA's

Sitka Pinnacles Marine Reserve

Off Cape Edgecumbe near Sitka, two small pinnacles rise from about 160 m, reaching to within 40 m of the ocean surface. Extensive observations made from submersible dives (O'Connell et al., 1998) have shown that the boulder field at the base of the pinnacles provides refuge for adult yelloweye rockfish, *Sebastes ruberrimus*; other demersal rockfish, *Sebastes* spp.; prowfish, *Zaprora silenus;* and lingcod, *Ophiodon elongatus;* as well as giant Pacific octopus, *Octopus dofleini*. The sides and top of the pinnacles are composed of columnar basalt, and gorgonian corals, *Primnoa* sp., grow on the steep walls of the pinnacles. Juvenile pelagic rockfishes, *Sebastes* spp., are abundant at the top of the pinnacles and in the water column above the pinnacles. The top of the pinnacles are covered with sessile invertebrates including anemones, tunicates, and hydrocorals, and adult lingcod aggregate there during the late spring and early summer (O'Connell, 1993).

In 1991, a few commercial fishermen had discovered the concentrations of lingcod on these pinnacles and experienced unusually high catch rates. Underwater investigations of the area by state fisheries biologists confirmed the large aggregations of lingcod and revealed the unique nature of the pinnacle area. State fishery biologists and managers were concerned about the risk of overfishing the concentrations of lingcod on these pinnacles and, beginning in 1997, implemented an emergency order to prohibit retention of all groundfish by commercial vessels in the vicinity of the pinnacles. However, the pinnacles quickly became a primary fishing ground for the charter boat and sport fleet, and in 1998, the Alaska Board of Fisheries permanently closed the pinnacle area to all state managed fisheries at the request of the local Fish and Game Advisory Committee. Public support for establishing a reserve was widespread as a result of a public outreach initiative (that included showing underwater footage from submersible dives on the pinnacles) by the local biologists and managers.

The state biologists also petitioned the Council to prohibit fishing for Federally managed species (including Pacific halibut) in the pinnacle area, thereby creating a comprehensive marine reserve. The Sitka Pinnacles Marine Reserve was implemented in 2000 as Gulf of Alaska (GOA) Groundfish FMP Amendment 59 (NPFMC, 1998). Regulations prohibit the use of all recreational and commercial fishing gear (except pelagic troll gear used for salmon), and anchoring by fishing vessels within a 10.3 km^2 (3 n.mi.^{2}) rectangular area encompassing the pinnacles (Fig. 2).

This MPA appears to be effective at protecting a post-spawning aggregation of lingcod, although comprehensive surveys of the lingcod population are lacking. Closure of this area is supported by the local fleet of commercial, charter, sport, and subsistence fishermen. Compliance with the MPA regulations appears to be high. Although there have been a few anonymous reports of violations to state biologists, no citations have been issued by enforcement personnel (O'Connell[3]).

Glacier Bay National Park and Preserve

In 1998, President William J. Clinton signed into law sweeping restrictions on commercial fishing in marine waters of Glacier Bay National Park in Southeast Alaska (Fig. 2). The law established a 449.3 km^2 (131 n.mi.^{2}) MPA closed to commercial fishing (effective in 1999) and another 885 km^2 (258 n.mi.^{2}) undergoing a commercial fishing phase-out. Closed areas include 216 km^2 (63 n.mi.^{2}) of wilderness waters[4] that formerly supported a productive Dungeness crab, *Cancer magister*, fishery and 233 km^2 (68 n.mi.^{2}) in the bay's upper reaches where tidewater glaciers have been receding. The remaining commercial fisheries for Tanner crab, *Chionoecetes bairdi*, halibut, and salmon will continue only for the lifetimes of the existing permit holders with a qualifying history. Fisheries for groundfish and king crab were ended, while the Tanner crab and Pacific halibut fisheries are restricted to just the middle and southern ends of Glacier Bay proper during the phase-out. Fisheries in Icy Strait and outside waters within three miles of shore continue as before.

The closures were enacted to protect park values, which were considered incompatible with commercial extraction and were not due to conservation concerns associated with commercial fishing. Recognizing the economic hardships imposed by the commercial fishing closures, the U.S. Congress approved an $8 million buy-out program for Dungeness crab fishermen and a compensation package of $23 million for other affected entities representing fishing permit holders (46.5%), crewmembers (8.4%), processors (21.1%), processor workers (1.7%), businesses (7.5%), communities that lost tax revenues (1.7%), and communities that suffered indirectly (13.1%).

Glacier Bay provides unique research opportunities on the effects of fisheries. Research in the reserve is focused on the effects of the closures on commercial fish species, including the potential efficacy of the reserves for crab and Pacific halibut that may cross reserve boundaries, and comparisons of Dungeness crab populations inside and outside of protected areas. Preliminary results indicated that, as expected, unfished areas accumulated larger populations of legal-sized male crabs (Shirley[5]). Notably not different between fished and unfished areas was limb loss, primarily the front claws, which was suspected to be an effect of handling in a commercial fishery and which affects survival, molting, and mating. In this case, the controlled experiment suggested the cause of limb loss was large predators, such as Pacific

[3]O'Connell, Victoria, ADFG, Sitka. Personal commun. 2004.

[4]The Wilderness Act of 1964 required designation of wilderness areas on Federal public lands. In 1980, when Glacier Bay National Monument was designated as Glacier Bay National Park and Preserve, >2 million acres of land and water received wilderness designation.

[5]Shirley, Tom, Univ. of Alaska, Juneau. Personal commun. 2004.

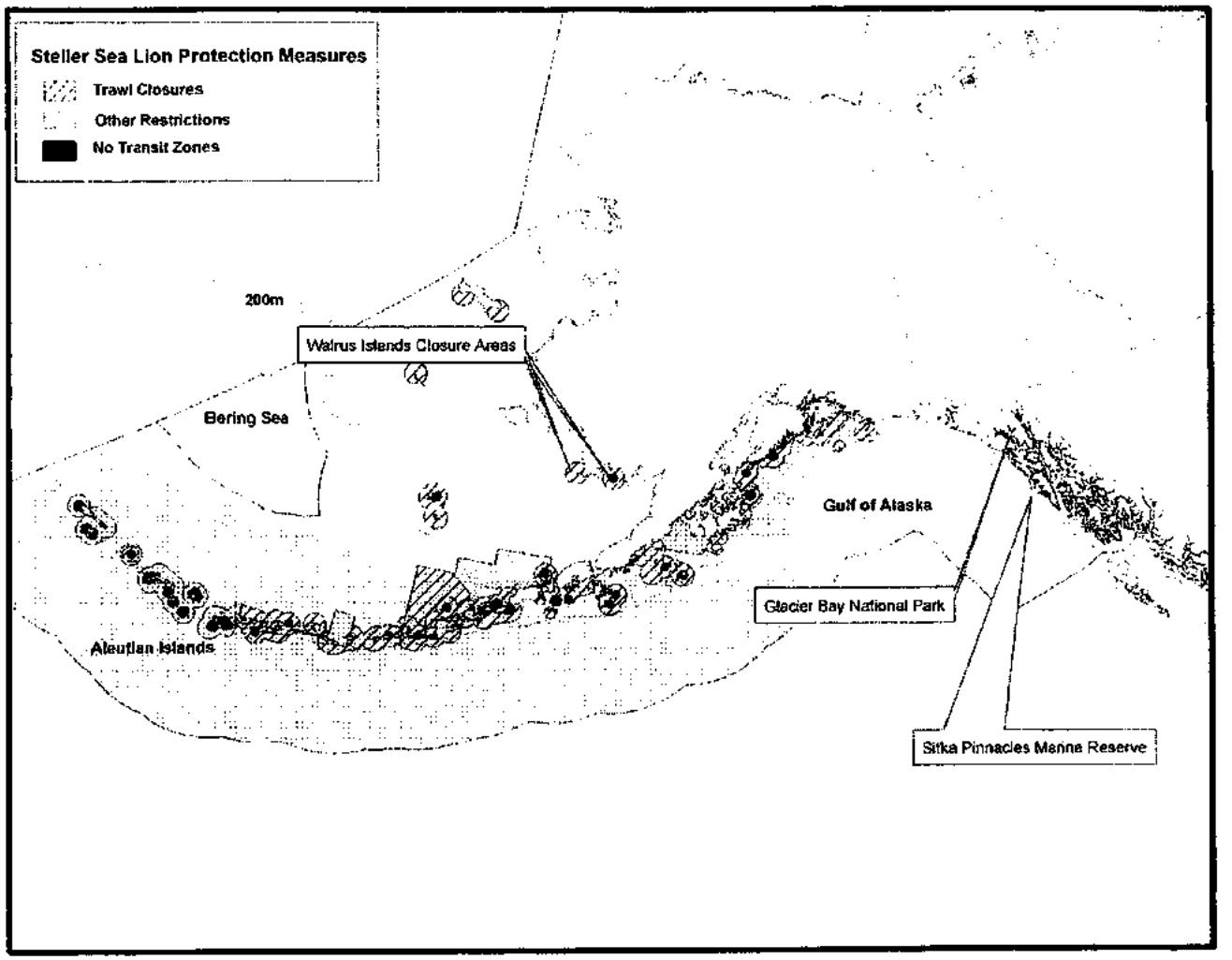

Figure 2.—MPA's designed to protect ecological structure and function.

halibut; sea otters, *Enhydra lutris;* river otters, *Lutra canadensis*; and Pacific octopus.

Walrus Islands Closure Areas

Pacific walrus, *Odobenus rosmarus divergens*, occur throughout the Chukchi and Bering Seas, with the southernmost major haulouts occurring in northern Bristol Bay on the islands of Round Island and the Twins, as well as on Cape Pierce. These haulouts are occupied by adult males during the spring and summer months when resting between foraging trips for invertebrates throughout Bristol Bay. Although the incidental catch of Pacific walrus in groundfish fishing operations was rare, the potential disruption of animals on their haulout sites or during feeding was of concern to Federal biologists and also to Alaska natives who hunt Pacific walrus for subsistence uses.

Biologists studying Pacific walrus at these haulouts had noticed that their numbers declined over the season, coincident with fishing effort by trawl vessels targeting yellowfin sole, *Limanda aspera*, in the spring once the ice sheet had retreated. Biologists believed that sound from the vessels could potentially be disrupting acoustic communication of these animals, both in the air and water environments, and proposed a 22.2 km (12 n.mi.) boundary around haulouts to reduce acoustical disruption.

Based on an analysis of this proposal, the Council developed regulations to prohibit all vessels from fishing for groundfish species within 22.2 km (12 n.mi.) of Round Island, the Twins, and Cape Pierce in northern Bristol Bay, during the period from 1 April through 30 September (Fig. 2). It was estimated that this regulation cost the fleet up to $4 million in lost ex-vessel revenues, based on 1988 catches and prices (NPFMC, 1991). This MPA, which totals 3,087 km^2 (900 $n.mi.^2$), was first established as a temporary measure in 1989 under

Bering Sea and Aleutian Islands (BSAI) Groundfish FMP Amendment 13, and it was implemented as a permanent measure under Amendment 17 in 1992 (NPFMC, 1991). In conjunction with the Federal action, a no-transit zone, except by permit, was established by the Alaska Board of Game for vessels within 5.6 km (3 n.mi.) of Round Island in the Walrus Island State Game Sanctuary.

The Walrus Islands closures may have substantially reduced effects of acoustic disturbance based on observations that more Pacific walrus occupy the haulouts throughout the summer now than before the closures (Seagars[6]). Nevertheless, it may be impossible to ascertain the impact of the MPA on the Pacific walrus population as a whole. The population had been reduced by commercial exploitation to a low in the mid 1950's, and by the late 1970's it had apparently recovered to pre-exploitation levels of 200,000 to 250,000 animals (Angliss and Lodge, 2002).

Steller Sea Lion Mitigation MPA's

The western stock of Steller sea lions declined about 80% between the 1950's and the late 1980's, and was listed as threatened under the Endangered Species Act in 1990 by emergency rule. Multiple factors, including fishery related effects, likely played a role in the decline (National Research Council, 2003). At the time of listing, NMFS enacted several regulations to reduce direct mortality as a result of fishing, including no shooting at sea lions, a reduced incidental catch limit, and establishment of 5.6 km (3 n.mi.) radius no-entry buffer zones around all rookeries to reduce disturbance and reduce opportunities for shooting at sea lions.

In 1991, NMFS completed a consultation on proposed groundfish harvest specifications, pursuant to Section 7 of the Endangered Species Act (ESA), and concluded that the spatial and temporal compression of Gulf of Alaska walleye pollock, *Theragra chalcogramma*, fisheries could create competition for prey and thus contribute to the decline of sea lions (Fritz et al., 1995). In response, NMFS prohibited trawling within a 18.5 km (10 n.mi.) radius of all rookeries in the Gulf of Alaska. In 1992, 18.5 km (10 n.mi.) radius trawl closures were also implemented around all rookeries in the Bering Sea and Aleutian Islands area.

Simultaneously, the Bogoslof area was closed to walleye pollock fishing, and concerns about the redistribution of effort led to a seasonal extension of five Aleutian Islands rookeries from 18.5 km (10 n.mi.) to 37 km (20 n.mi.) through 15 April each year. The western stock of Steller sea lions was listed as endangered in 1997, and in 1999, trawling for pollock was also prohibited within 18.5 km (10 n.mi.) of major haulout areas, with some closures extending out to 37 km (20 n.mi.).

In November 2000, NMFS completed another ESA Section 7 consultation on the groundfish fisheries and concluded that proposed fisheries for walleye pollock; Pacific cod, *Gadus macrocephalus*; and Atka mackerel, *Pleurogrammus monopterygius*, would jeopardize the continued existence of Steller sea lions and adversely modify their critical habitat due to potential prey competition and modification of their prey field (NMFS, 2000). To bring the fisheries into compliance with the ESA, the Council established a large stakeholder committee to develop fishery management measures that would address the concerns about prey competition and still allow viable fisheries to be prosecuted.

The committee developed the alternative that was adopted by the Council in October 2001 and implemented by NMFS for 2002 and thereafter. Management measures adopted were gear, fishery, and area specific and provide full or partial closure to 198,940 km^2 (58,000 $n.mi.^2$) of the ocean, and other measures throughout the Aleutian Islands and much of the Gulf of Alaska (Fig. 2). Implementation of this complex suite of MPA's for Steller sea lions was projected to result in losses of $2.6 million to $14.0 million in ex-vessel revenue to the harvesters and a loss of 15 to 411 full-time jobs in the harvesting and processing sectors (NMFS, 2001a).

The Steller sea lion mitigation MPA's included no-transit zones within 5.6 km (3 n.mi.) of 37 rookeries in the Gulf of Alaska (excluding southeast Alaska) to protect Steller sea lions from disturbance. These no-transit zones, including the 5.6 km (3 n.mi.) zone around Round Island to protect Pacific walrus, are truly no-take reserves with no allowance for recreational fishing, and are the only such marine reserves in Alaska. Despite the preponderance of evidence indicating that nutritional stress is not a primary threat to recovery of Steller sea lions (National Research Council, 2003), it is likely that the no-transit zones will stay in effect until the endangered status of Steller sea lions is resolved.

In addition to mitigating potential effects of fishing on Steller sea lions, the MPA's also offer localized protection to deep-sea coral and sponge communities along the Aleutian Islands. Submersible observations have found areas with complex coral and sponge communities within the areas encompassed by the MPA's, although the absolute amount of protection to this habitat has not been quantified. Additional submersible research to understand the distribution of corals and sponges in the North Pacific is planned or ongoing (Stone[7]).

Scientific Research MPA's

MPA's can provide scientific control sites to distinguish natural variability from human impacts such as fishing activities (Lindeboom, 2000; National Research Council, 2001). Scientific research MPA's have been imposed in the Alaska EEZ on a temporary basis when the need arises. For example, a seasonal MPA was established in the Bering Sea west of Cape Sarichef during the years 2003–05, to test the hypothesis that intensive trawl fishing may create a local depletion of Pacific cod, an important prey item for Steller sea lions (NMFS, 2002). Although the MPA was scheduled to also be in effect for 2006, NMFS determined that the MPA was no longer necessary because the study had overwhelmingly concluded

[6]Seagars, Dana, USFWS, Anchorage, Alaska. Personal commun. 2004.

[7]Stone, Robert, NMFS Auke Bay Lab., Juneau. Personal commun. 2005.

that there were no differences in Pacific cod abundance between the intensively trawled areas and the untrawled control areas (Logerwell[8]).

Chiniak Gully

In 2001, scientists from the NMFS Alaska Fisheries Science Center (AFSC) began an investigation of the effects of fishing on Steller sea lion prey (walleye pollock and capelin, *Mallotus villosus*) abundance and distribution in commercial trawl fishing grounds located on the east side of Kodiak Island. The sampling design uses control (unfished) and treatment (fished) areas of Chiniak and Barnabas gullies, respectively. Regulations were established to close Chiniak gully to trawl fishing from 1 August through 20 September during 2001–04. In 2005, scientists at the AFSC apprised the Council that they were interested in reestablishing the Chinak gully research closure for 2006 through 2010 to collect additional data. In February 2006, the Council reviewed the analysis (NMFS, 2006), and recommended that this research closure be reestablished under the condition that if the study cannot occur in any of these years, or if the research is completed prior to 20 September, then the Chiniak gully should be opened for fishing as soon as possible.

Southeast Alaska Dive Fishery Research Areas

When the dive fishery management plans were developed by the State of Alaska in the 1990's for sea cucumbers, *Parastichopus californicus*; red sea urchins, *Strongylocentrotus franciscanus*; and geoduck clams, *Panopea abrupta*, in southeast Alaska, sections of shoreline were closed to harvests as control sites for these species singly or in combination. These sites, in southern southeast Alaska, are surveyed on an annual or nearly annual basis to estimate biomass and size compositions. Comparisons of population characteristics between the control and harvest sites are made to evaluate the extent to which population changes might be due to fishing or to environmental variation. To date, the effects of fishing, relative to natural variation, have been small due to conservative quotas.

Habitat Conservation MPA's

Kodiak King Crab Protection Zones

The fishery for red king crab stocks in the Kodiak Area of the Gulf of Alaska declined sharply in the late 1960's and, following a brief period of recovery, they declined again in the mid and late 1970's (Zheng et al., 1996). These declines were likely due to a combination of factors including overfishing and changing oceanographic conditions (Kruse, 1996). State and Federal fishery managers sought to take whatever actions were necessary to provide recovery of this stock. Beginning in 1982, the fishery was closed, and other fisheries were displaced to limit bycatch and habitat effects of fishing. With no signs of recovery by the end of 1985, the Alaska Department of Fish and Game proposed that emergency action be taken to implement bottom trawl closures in areas around most of Kodiak Island.

Emergency regulations were implemented through June 1986, and the Council established an industry workgroup to develop a long-term solution to protect red king crabs from trawling-induced mortality, particularly during their molting period, and to protect habitat from potential impacts due to trawling. The workgroup recommendations were adopted by the Council as Amendment 15 to the GOA Groundfish FMP (NPFMC, 1986).

In 1987, three types of trawl closure areas were established on the south and east sides of Kodiak Island based on the use of areas by crab at different life stages (Fig. 3). Type I areas, totaling 3,430 km^2 (1,000 n.mi.^{2}), had very high king crab concentrations and, to promote rebuilding of the crab stocks, they were closed all year to all trawling except with pelagic gear. Type II areas, which total 1,715 km^2 (500 n.mi.^{2}), had lower crab concentrations throughout most of the year, but were closed to nonpelagic gear from 15 February through 15 June when crabs are molting and have higher bycatch mortality rates. Type III areas had been identified as important juvenile king crab rearing or migratory areas. Type III areas would be closed to trawling following a determination that a recruitment event has occurred. Originally established as a temporary measure while the stock recovered, the MPA later became established as a permanent measure for the Gulf of Alaska Groundfish FMP.

The red king crab stocks throughout the central and western Gulf of Alaska remain at very low levels, despite many management measures implemented over the years to minimize fishing mortality and conserve crab habitat. The MPA closures have been in place for nearly 20 years, yet their benefits are difficult to ascertain. They have certainly helped to control red king crab bycatch in groundfish fisheries by reducing the probability of a trawler encountering aggregations of crabs, as well as limiting any effects trawling may have on crab habitat. However, Type III closures have never been triggered due to a lack of recruitment, although pods of small red king crab juveniles continue to be observed in several bays of Kodiak Island. Adult and juvenile red king crab numbers remain low as measured by trawl surveys in and around the Kodiak trawl closure areas (Spalinger, 2005).

Cook Inlet Trawl Closure Area

Similar to the fate of many other Tanner crab and red king crab stocks in the Gulf of Alaska, the Tanner and red king crab populations in Cook Inlet declined dramatically in the 1980's. The king crab fishery has been closed since 1984 and the Tanner crab fishery has been closed since 1991. Nevertheless, the stocks continued to decline, and surveys indicated no signs of recovery (Bechtol et al., 2002).

Although bottom trawling had never been conducted in Cook Inlet to any extent, state fishery managers felt that it would be prudent to be proactive and prevent trawling from expanding into the area, thus eliminating the possibility of bycatch or habitat impacts. In 1995, the Alaska Board of Fisheries prohibited

[8]Logerwell, L. 2005. Fishery interaction team presentations to the North Pacific Fishery Management Council. U.S. Dep. Commer., NMFS/AFSC Quarterly Report April–June:36–37.

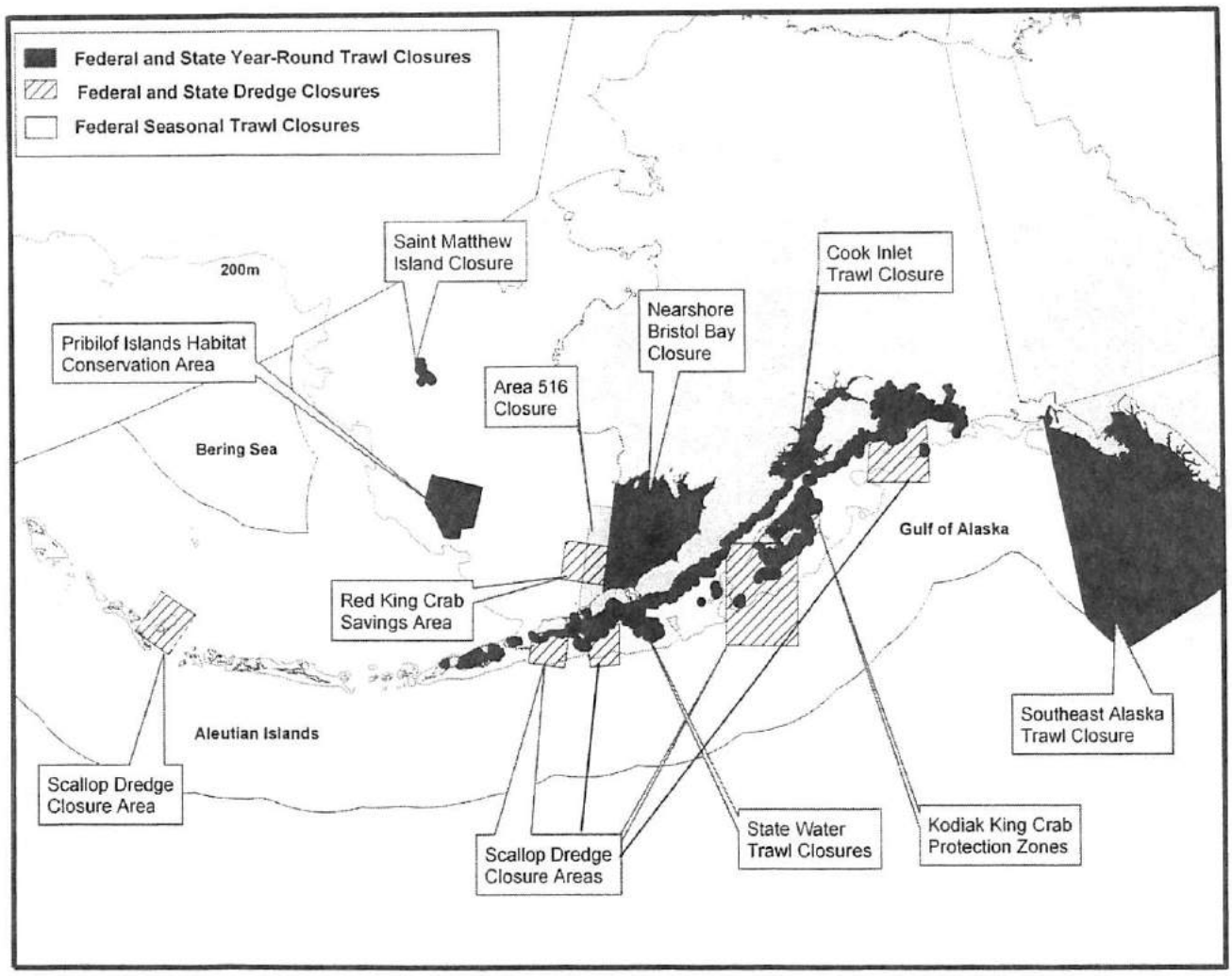

Figure 3.— MPA's designed to conserve fish habitat.

bottom trawling in state waters of Cook Inlet. The state proposed that the Council take complementary action for Federal waters, so the Council initiated an analysis of several alternatives to address the issue. In September 2000, the Council adopted an MPA that prohibited bottom trawling in all Federal waters of Cook Inlet (Fig. 3). This MPA was implemented in 2002 under GOA Groundfish FMP Amendment 60 (NPFMC, 2002).

The Cook Inlet Trawl Closure Area has only been in effect for a few years, and thus it is impossible to evaluate its effectiveness as an allocation or conservation measure. Recent trawl surveys have detected below-average numbers of juvenile Tanner crabs in Cook Inlet, and the red king crab stock remains at a very low level with no signs of rebuilding (Bechtol, 2005). In the absence of bycatch mortality and habitat impacts, there is little left for managers to do but wait for environmental conditions favorable for crab reproduction and survival.

Scallop Dredge Closure Areas

The weathervane scallop, *Patinopecten caurinus*, fishery has been managed by the State of Alaska since the inception of the fishery in the late 1960's (Shirley and Kruse, 1995). In 1998, the NMFS approved the Alaska Scallop FMP, delegating most authority to the State of Alaska to manage the scallop resources in the EEZ, including establishment of MPA's for this fishery. Concerns about crab bycatch in the scallop fishery and habitat effects due to scallop dredging prompted the Alaska Board of Fisheries to establish extensive closures to fishing with scallop dredges in state and Federal waters. Closures include Yakutat Bay; state and Federal waters south of Cordova, eastern Prince William Sound, Cook Inlet, Kachemak Bay and nearby state waters of outer Kenai Peninsula; most of the state waters surrounding Kodiak and Afognak Islands as well as a large block of Federal waters to the southwest of Kodiak; most of the state waters on the south side of the Alaska Peninsula; large bays of Akun, Akutan, and Unalaska Islands; and Petrel Bank

in the Aleutian Islands (Fig. 3). The state has also prohibited scallop dredging in the habitat conservation MPA's (no-trawl areas) adopted by the Council and NMFS in Bristol Bay and around the Pribilof Islands.

Nearshore Bristol Bay Trawl Closure Area and Red King Crab Savings Area

The Bristol Bay red king crab population collapsed in 1981 following a huge buildup in biomass and historic high catches. The cause of the collapse remains unknown, but it has been hypothesized by different scientists to be due to several factors including overfishing, discard mortality, trawl interactions, disease or other source of natural mortality, or reduced recruitment due to climatic events (Kruse, 1996). State fishery managers closed the fishery in 1982 and 1983.

The area in Bristol Bay where red king crabs were distributed, known as the "pot sanctuary," had been closed to foreign trawl fisheries since 1975 and to domestic trawl fisheries through the end of 1983, when Amendment 1 to the BSAI Groundfish FMP opened the area for the developing domestic trawl fisheries. This action raised concerns of state fishery managers and crab fishermen who requested that the Bristol Bay area be closed to all trawling to protect the remaining stock and their habitat from further impacts. In 1986, the Council adopted BSAI Groundfish FMP Amendment 10, which prohibited bottom trawling in central Bristol Bay where most crabs were found, encompassing about 27,440 km^2 (8,000 n.mi.^{2}). Unfortunately, surveys conducted in subsequent years failed to detect signs of recovery, and fishery managers again raised concerns that additional measures were needed.

To address these concerns, the Red King Crab Savings Area was established by emergency rule in 1995 as a year-round bottom trawl and dredge closure area (Fig. 3). This 13,720 km^2 (4,000 n.mi.^{2}) area was known to have high densities of adult red king crab and was thus assumed to be an important habitat area as well. Additionally, several additional options to reduce the impacts of trawling and dredging on red king crab stocks were considered by the Council, including time/area closures, bycatch limits, individual bycatch quotas, and penalties (Witherell and Harrington, 1996).

After further analysis and deliberation, the Council decided to implement an additional trawl closure area to protect juvenile red king crab and critical rearing habitat, which includes stalked ascidians and other living substrates (Ackley and Witherell, 1999). Beginning in 1997 BSAI Groundfish FMP Amendment 37 established a 65,170 km^2 (19,000 n.mi.^{2}) year-round closure to all trawling (bottom trawling and pelagic trawling) in all of Bristol Bay east of long. 163°W (Fig. 3). One small area within the Nearshore Bristol Bay MPA, bounded by long. 159° to 160°W and lat. 58° to 58°43'N, remains open to trawling during the period 1 April to 15 June each year. Analysis of observer data indicated that fisheries for yellowfin sole could be prosecuted within this area and not impact crab habitat or increase crab and Pacific herring bycatch (NPFMC, 1996).

The Red King Crab Savings Area also became permanent through Amendment 37. In adopting this MPA as a permanent measure, the Council provided for a limited bottom trawl fishery to occur in the Red King Crab Savings Area south of lat. 56°10'N, an area with historically high catch rates of rock sole. To ensure that this provision would not create allocation or conservation problems, the allowance for bottom trawling would only be made in years when there is a directed fishery for Bristol Bay red king crab using pot gear. If the fishery is to be open, a red king crab bycatch limit is established for this subarea, and vessels trawling for groundfish (mainly rock sole) can fish in the specified subarea until the bycatch limit is reached.

These MPA's, in combination with favorable environmental conditions, may have assisted in the recovery of the Bristol Bay red king crab stock. Survey information suggests that sessile benthic invertebrates used by juvenile king crab may be increasing in Bristol Bay (NPFMC, 2004d). Further, the red king crab stock has increased to biomass levels associated with maximum sustainable yield, and there are many year classes present in the population (NPFMC, 2004c). The red king crab fishery reopened in 1996, and annual catches have increased steadily, such that a conservative catch limit of 8,301 t (18.3 million pounds) was set for the season beginning in October 2005.

Area 516 Seasonal Closure

In 1987, when the central area of Bristol Bay was closed to trawling to protect red king crab, managers also decided to extend the closure further west on a seasonal basis to protect red king crab when they are in a fragile molting condition. This seasonal closure area, designated as Area 516, is closed to all trawling from 15 March through 15 June (Fig. 3). The central portion of the area became a year-round trawl closure in 1995, with the implementation of the Red King Crab Savings Area. The southern part of Area 516 remains open during the second part of the year, and most of the Bering Sea red king crab bycatch is taken in this area by bottom trawl vessels targeting northern rock sole, *Lepidopsetta polyxystra*.

Pribilof Islands Habitat Conservation Area

In 1989, the Central Bering Sea Fishermen's Association initiated a proposal to prohibit trawling around the Pribilof Islands to protect habitat for juvenile blue king crab, *P. platypus*, forage fish for marine mammals and seabirds, and maintain a stable ecosystem in the surrounding waters. The blue king crab population had decreased over 90% from a peak in 1975, and the fishery was closed entirely in 1988 due to low abundance.

The Council initiated an analysis of the proposal in 1991, and the analysis was revised several times to consider other boundary configurations. Through spatial display of NMFS survey data, groundfish observer data, and commercial crab fishery data, the analysis provided an understanding of blue king crab habitat and trawl fishing effort distribution. The area that was ultimately

selected was designed to include the vast majority of blue king crabs, while at the same time, allowing the trawl fishery access to the edge of the 100 m contour, which is economically important to trawl vessels targeting walleye pollock and Pacific cod. The yellowfin sole trawl fishery was negatively affected by the closure north and east of the Pribilof Islands, but the costs of the closure to this fleet were not quantified. In 1995, the 24,010 km^2 (7,000 n.mi.^{2}) Pribilof Islands Habitat Conservation Area was implemented by BSAI Groundfish FMP Amendment 21a, and the area was permanently closed to all trawling and dredging year-round (Fig. 3).

The Pribilof Islands Conservation Area has not been successful in rebuilding the blue king crab stock, although it may have served to limit the effects of trawl fisheries on juvenile crabs and habitat. Despite the protection offered by the MPA, and closure of the crab fisheries, the Pribilof Islands stock of blue king crab has continued to decline to very low levels and is considered to be in an "overfished" condition (NPFMC, 2004c). On the other hand, the Pribilof Islands red king crab stock seems to have benefited from the trawl closure, with increased abundance since 1996 (NPFMC, 2004c).

Southeast Alaska Trawl Closure

In 1991, longline fishermen from Sitka and other local citizens proposed that all trawling (using bottom trawls or pelagic trawls) be prohibited off southeast Alaska. The rationale for this was that trawling was causing long-term damage to deep-sea corals, conservation problems for Pacific rockfish, *Sebastes* spp. and *Sebastolobus* spp., and social disruption to the local fishing industry (Behnken, 1993). In evaluating this proposal, the link between coral use by rockfish and damage to rockfish habitat as a result of trawling was unknown. Rather than prohibit trawling entirely, the Council instead adopted a rebuilding plan for Pacific ocean perch, *Sebastes alutus*, the primary rockfish species in the area fished by trawl gear.

Although the original MPA proposal was not adopted when brought to the Council for final decision, it was later adopted as part of the license limitation program that was implemented under GOA Groundfish FMP Amendment 41. Beginning in 1998, all trawling was prohibited in southeast Alaska east of long. 140°E (Fig. 3). This MPA, with a total area of 180,418 km^2 (52,600 n.mi.^{2}), includes continental shelf, slope, and basin areas.

The value of the southeast Alaska trawl closure is difficult to evaluate. From a conservation perspective, the MPA appears to have met its objectives of conserving habitat for rockfish. Biomass of Pacific ocean perch in the Gulf of Alaska has increased dramatically in the past decade (NPFMC, 2004b). However, this increase can be primarily attributable to large year-classes produced prior to implementation of the MPA, as well as a reduced harvest rate on exploitable sized fish. From a social perspective, the MPA is viewed as successful by local southeast Alaska fishermen who predominantly target groundfish with longline gear. Interactions between fixed gear (longlines) and mobile gear (trawls) have been eliminated, and concerns about habitat degradation have been addressed. More recently, longline fishermen have begun to develop techniques to harvest species of rockfish that previously could only be harvested in commercial quantities with trawl gear (Falvey[9]).

State Waters Trawl and Goundfish Closures

The Alaska Board of Fisheries has closed extensive areas in state waters to trawling, including areas closed in conjunction with the Federal trawl closures in Kodiak, Bristol Bay, and Cook Inlet described above. These closures are in response to proposals by the public and the Alaska Department of Fish and Game to protect habitats as well as vulnerable species. In the Kodiak area, in addition to the Type I, II, and III Federal areas and Steller sea lion closures, there are year-round bottom-trawl closures enacted in 1986 in state waters surrounding most of the island to protect king and Tanner crabs. The boundaries often follow the 3-mi. limit, except in some cases, particularly along Shelikof Strait, the boundaries extend between points of land, offering protection to embayments. On the mainland across Shelikof Strait, virtually all state waters from the mouth of Cook Inlet along the Alaska Peninsula to Unimak Pass are closed to bottom trawling. Looking eastward to the central Gulf of Alaska, the outer coastal state waters of the Kenai Peninsula from the mouth of Cook Inlet east to Cape Fairfield are closed to groundfish fishing with bottom trawls (Fig. 3).

In the central Gulf, including Prince William Sound inside and outside waters to the 3-mi. limit, bottom trawling is prohibited except for very limited fishing for sablefish. All trawling, including pelagic trawling, is prohibited in large sections of eastern Prince William Sound to protect crabs and Pacific herring gear (Trowbridge[10]).

In state waters of the eastern Gulf of Alaska (east of Prince William Sound), including southeast Alaska inside waters, groundfish trawling requires a permit issued by the Alaska Department of Fish and Game Commissioner. This requirement effectively closes state waters of the eastern Gulf to groundfish trawling with one exception: a very restricted flatfish fishery limited to beam trawls by the Board of Fisheries in 1997 and conducted in four small areas in internal waters of central southeast Alaska. The only other trawling permitted in southeast Alaska is for shrimp, *Pandalopsis dispar*, and *Panadalus* spp., with beam trawls under special conditions. The combined effect of these closures in the eastern, central, and western Gulf of Alaska is that nearly all state waters in the Gulf of Alaska are closed to bottom trawling for groundfish.

In the Bering Sea, in addition to the nearshore Bristol Bay trawl closure described previously, the Alaska Board of Fisheries closed all the major embayments west of Unimak Pass to Umnak Island in the eastern Aleutian Islands to trawling. The Board also closed state

[9]Falvey, Dan, commercial fisherman, Sitka, Alaska. Personal commun. 2005.

[10]Trowbridge, Charles, ADFG, Homer, Alaska. Personal commun. 2005.

waters to all groundfish fishing (including trawling) around St. Matthew, Hall, and Pinnacle Islands in the Bering Sea in 2001. Notably not closed to bottom trawling are state waters in the vicinity of "cod alley" to the north of Unimak Island and all of the central and western Aleutian Islands outside of Steller sea lion protection areas.

Essential Fish Habitat Conservation Areas

In February 2005, the Council and NMFS created several new MPA's to conserve essential fish habitat (EFH) from potential adverse effects of fishing. EFH is defined by the Magnuson-Stevens Fishery Conservation and Management Act as those waters and substrate needed by fish for spawning, breeding, feeding, or growth to maturity. A 2,500+ page scientific analysis was prepared to evaluate the impacts of fishing on EFH, and evaluate alternatives to describe and conserve EFH from fishing impacts (NMFS, 2005). The analysis concluded that fisheries do have long-term effects on habitat, but these impacts were considered minimal and would not have detrimental effects on fish populations or their habitats. Nevertheless, as a precautionary measure, the Council adopted several new MPA's to conserve EFH, and these MPA's were implemented by NMFS in 2006, when approved by the Secretary of Commerce.

Fishery managers were concerned about the effects of fishing in areas with emergent epifauna, particularly corals and sponges that may be vulnerable to fishing impacts. Corals apparently provide protective habitat for several Pacific rockfish species, *Sebastolobus alascanus* and *Sebastes* spp., and Atka mackerel (Heifetz, 2002; Krieger and Wing, 2002), and sponges and other living substrates have been associated with a variety of demersal fish species (Malecha et al., 2005). Research had shown that bottom trawling could damage corals (Krieger, 2000), vase sponges, and other emergent epifauna off Alaska (Freese et al., 1999; Freese 2002), and that the first pass of a trawl may cause relatively more extensive damage than subsequent passes (i.e. "The first pass is the worst pass."). Gorgonian corals were thought to be especially vulnerable, given the longevity of colonies (Witherell and Coon, 2000).

Aleutian Islands Habitat Conservation Area

To address concerns about the impacts of bottom trawling on benthic habitat (particularly on coral and sponge communities) in the Aleutian Islands, the Council and NMFS took action in February 2005 to prohibit all bottom trawling, except in small discrete "open" areas. The concept of freezing the footprint of trawling to areas historically fished, as a habitat conservation measure for the Aleutian Islands, Bering Sea, and Gulf of Alaska, was first evaluated in the Groundfish Fisheries Draft Programmatic Environmental Impact Statement (NMFS, 2001b). This "open area approach" was further developed by Council staff in early 2002 during the formulation of EFH EIS alternatives, and discussed extensively by the Council's EFH Committee. Following the release of observer data by NMFS to the environmental group Oceana in 2002 and their subsequent analysis of the trawl haul locations and bycatch location of coral, sponges, and bryozoans, the group proposed a slightly different set of open areas for the Aleutian Islands (Shester and Ayers, 2005). With modifications to account for data deficiencies regarding trawl locations, the Council adopted this approach in February 2005 as a major component of its habitat conservation program in the Aleutian Islands area. Beginning in 2006, over 95% of the Aleutian Islands management area was closed to bottom trawling (950,463 km^2 or 277,100 $n.mi.^2$), and about 4% (42,611 km^2 or 12,423 $n.mi.^2$) remain open (Fig. 4).

Aleutian Islands Coral Habitat Protection Areas

Additional conservation of EFH in the Aleutian Islands is provided by another set of MPA's, called the Aleutian Islands Coral Habitat Protection Areas. These MPA's includes six sites with especially high densities of corals and sponges (the so-called "coral garden" areas) that were delineated based on submersible observations (Stone, 2005). Beginning in 2006, these areas were closed to all bottom contact fishing gear (longlines, pots, trawls, etc.) and should thus be considered as marine reserves with a total area of 377.3 km^2 (110 $n.mi.^2$) (Fig. 4). To improve monitoring and enforcement of the Aleutian Island closures, a vessel monitoring system (VMS) was required for all fishing vessels. Additionally, a comprehensive plan for research and monitoring will be developed to improve scientific information about this area, and improve and evaluate effectiveness of these fishery management measures.

Gulf of Alaska Slope Habitat Conservation Areas

To conserve EFH in the Gulf of Alaska, bottom trawling for all groundfish species was prohibited in 10 designated areas along the continental shelf, beginning in 2006 (Fig. 5). These areas, which are thought to contain high relief bottom and coral communities, total 7,155 km^2 (2,086 $n.mi.^2$). At the time of the Council's 5-year review of EFH in 2011, the Council will review available research information regarding two of the closed areas (in the vicinity of Sanak Island and Albatross Bank) to determine efficacy of continued closure.

Habitat Areas of Particular Concern

In February 2005, in addition to mitigating potential effects of fishing on EFH, the Council took final action to designate and protect habitat areas of particular concern (HAPC). Identification of HAPC provides focus for additional conservation efforts for those portions of EFH that are ecologically important, sensitive to disturbance, exposed to development activities, or rare. To protect these areas, the Council took action to eliminate virtually all potential impacts due to fishing by prohibiting almost all fishing gear. As a result, these areas should essentially be considered no-take marine reserves. While pelagic fishing would be allowed in these areas, none is anticipated, so resource extraction will be nil in the areas (NPFMC, 2005a).

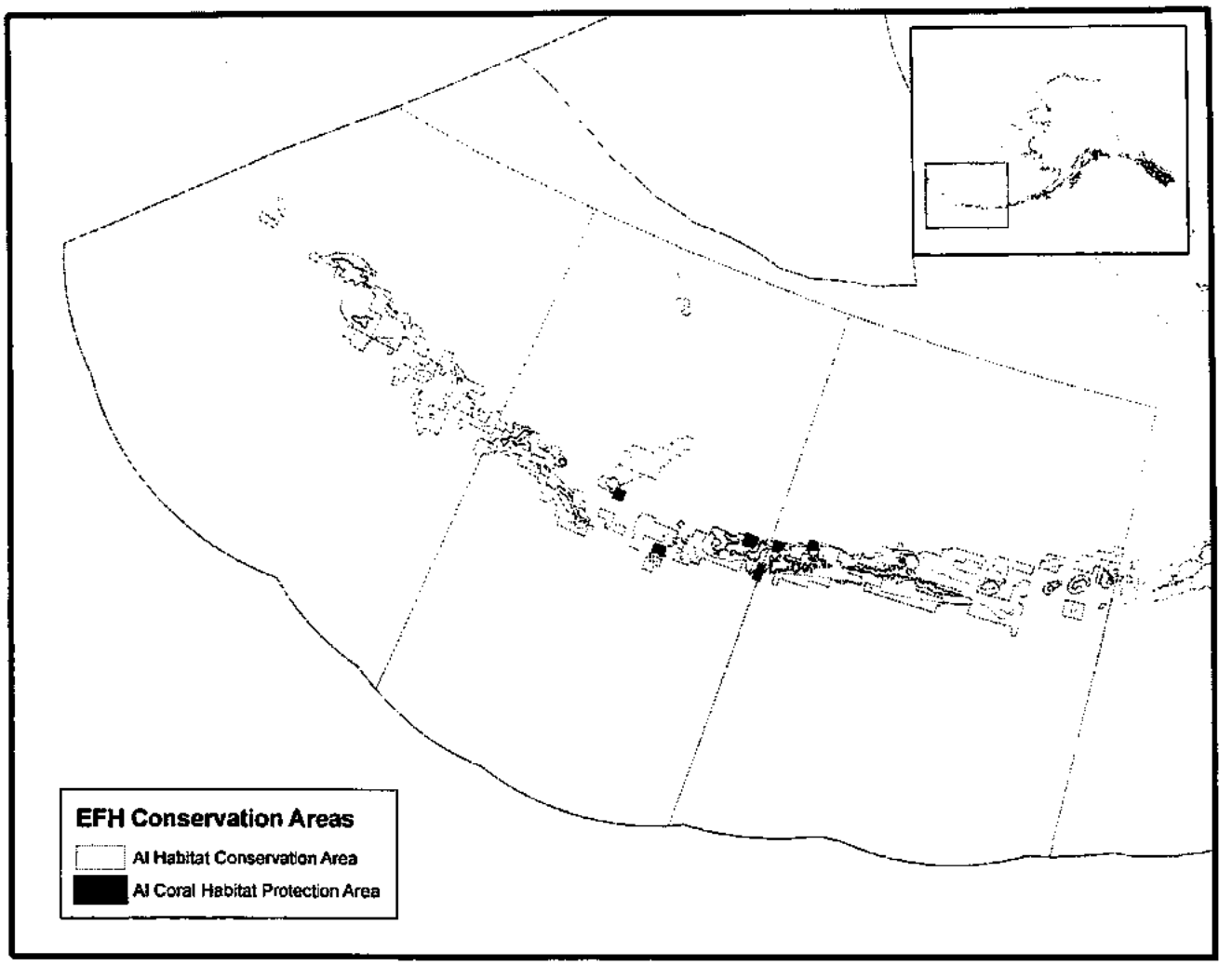

Figure 4.—MPA's proposed to conserve essential fish habitat in the Aleutian Islands area.

Gulf of Alaska Coral Habitat Protection Areas

In southeast Alaska, multibeam surveys and submersible observations have discovered boulder and bedrock substrates supporting dense aggregations of *Primnoa* coral. In an area about 28 km west of Cape Ommaney in southeast Alaska, submersible observations confirmed the presence of several hundred *Primnoa* colonies attached to boulders and bedrock at depths of 200–250 m (NPFMC, 2005a). Many of these colonies exceeded 1 m in height. Dense aggregations of *Primnoa* were also found at similar depths and substrates along the western flank of the "Fairweather Grounds" in the eastern Gulf of Alaska.

To highlight research areas and protect the fragile coral habitats, the Council designated these areas with *Primnoa* as HAPC (Fig. 6). The total size of these areas is 230 km^2 (67 n.mi.^{2}). All Federally managed fisheries using bottom-contact gear (longlines, trawls, pots, and dinglebar gear) was prohibited within five zones of the HAPC area, beginning in 2006. These zones, which total 46 km^2 (13.5 n.mi.^{2}), include the areas where there have been direct submersible observations documenting the presence of *Primnoa*.

Alaska Seamount Habitat Protection Areas

Seamounts are considered to be HAPC areas because they may be unique ecosystems with endemic stocks or species (De Forges et al., 2000), including corals (Tsao and Morgan, 2005), and thus particularly vulnerable to human activities such as fishing. Relatively diverse fish and invertebrate communities have been found on the top and flanks of several seamounts off Alaska (Alton, 1986; Hoff and Stevens, 2005). To protect these unique habitats and ecosystems, the Council voted to prohibit all bottom contact fishing by Federally managed fisheries on the 16 seamounts in the

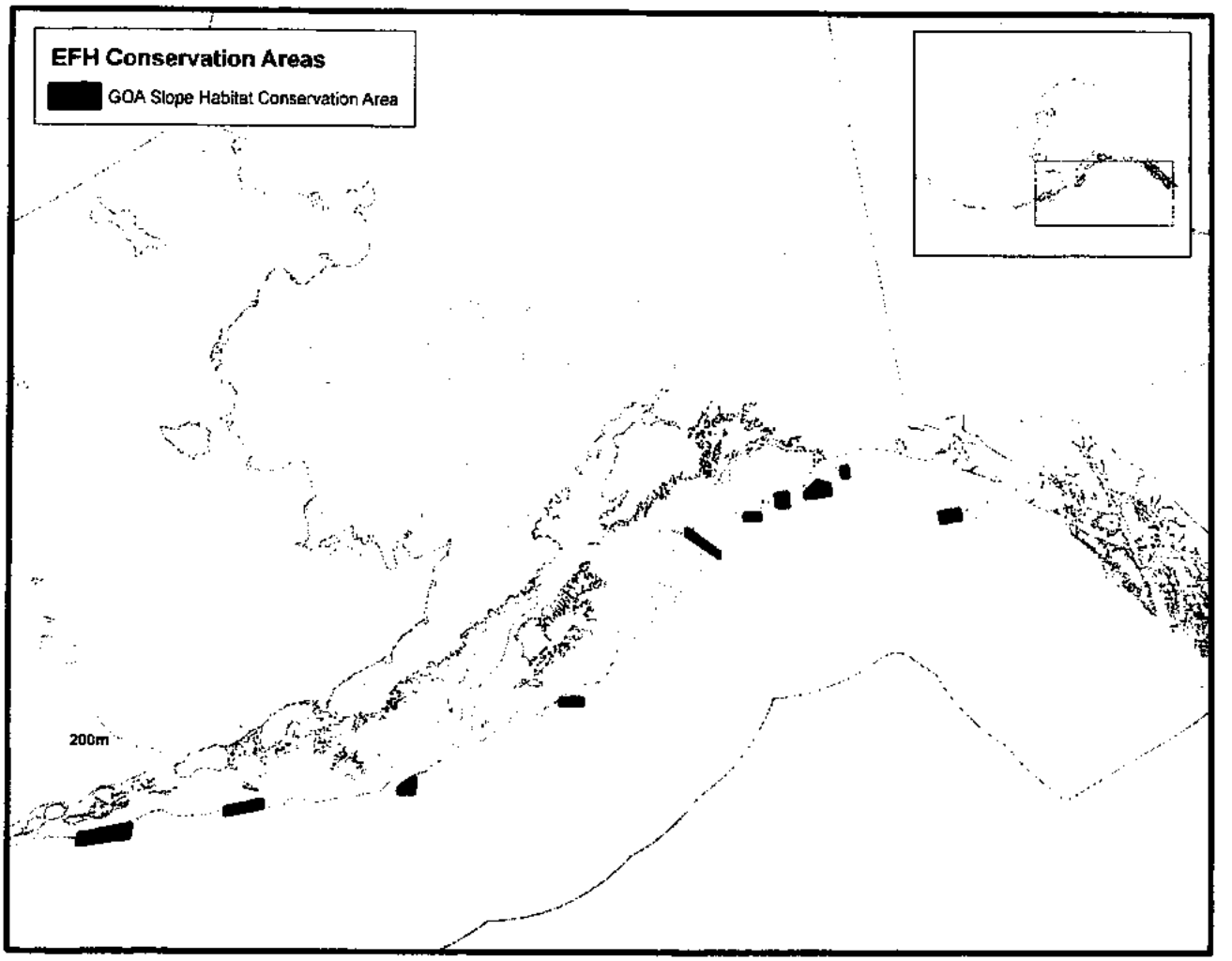

Figure 5.—MPA's proposed to conserve essential fish habitat in the Gulf of Alaska area.

EEZ off Alaska named on NOAA charts: Bowers, Brown, Chirkikof, Marchand, Dall, Denson, Derickson, Dickins, Giacomini, Kodiak, Odessey, Patton, Quinn, Sirius, Unimak, and Welker seamounts. As a group, these MPA's comprise the Alaska Seamount Habitat Conservation Zone with a total combined area of 18,278 km^2 (5,329 n.mi.^{2}) (Fig. 6).

Bowers Ridge Habitat Conservation Zone

Bowers Ridge is a submerged geographic structure that forms an arc extending north from the Aleutian Islands. The top of the ridge rises to less than 200 m from the surface near its southern end, with a deeper area to the north. Although relatively unexplored, the area is likely to include habitats for corals and other living substrates, as well as fish and crab species. As a precautionary measure, the Council voted to prohibit mobile fishing gear that contacts the bottom (i.e. dredges, nonpelagic trawls, and dinglebar gear) within this 18,131 km^2 (5,286 n.mi.^{2}) area (Fig. 6).

Vulnerable Species MPA's

Commercial Salmon Fishery Prohibited Area

The International Convention for the High Seas Fisheries of the North Pacific was signed in 1952. Under the Convention (as amended), Japan agreed to prohibit its mothership salmon fishery from operating within 370 km (200 n.mi.) of the Alaska coast east of long. 175°E (near Attu Island). The intent of this prohibition was to keep the Japanese from competing with U.S. fishermen and minimize harvesting salmon of mixed stock origin. The United States implemented the North Pacific Fisheries Act of 1954 to codify its role in the Convention, thus prohibiting domestic fishermen from fishing for salmon with nets in the North Pacific outside of Alaska waters, except for three historical fisheries managed by the state: False

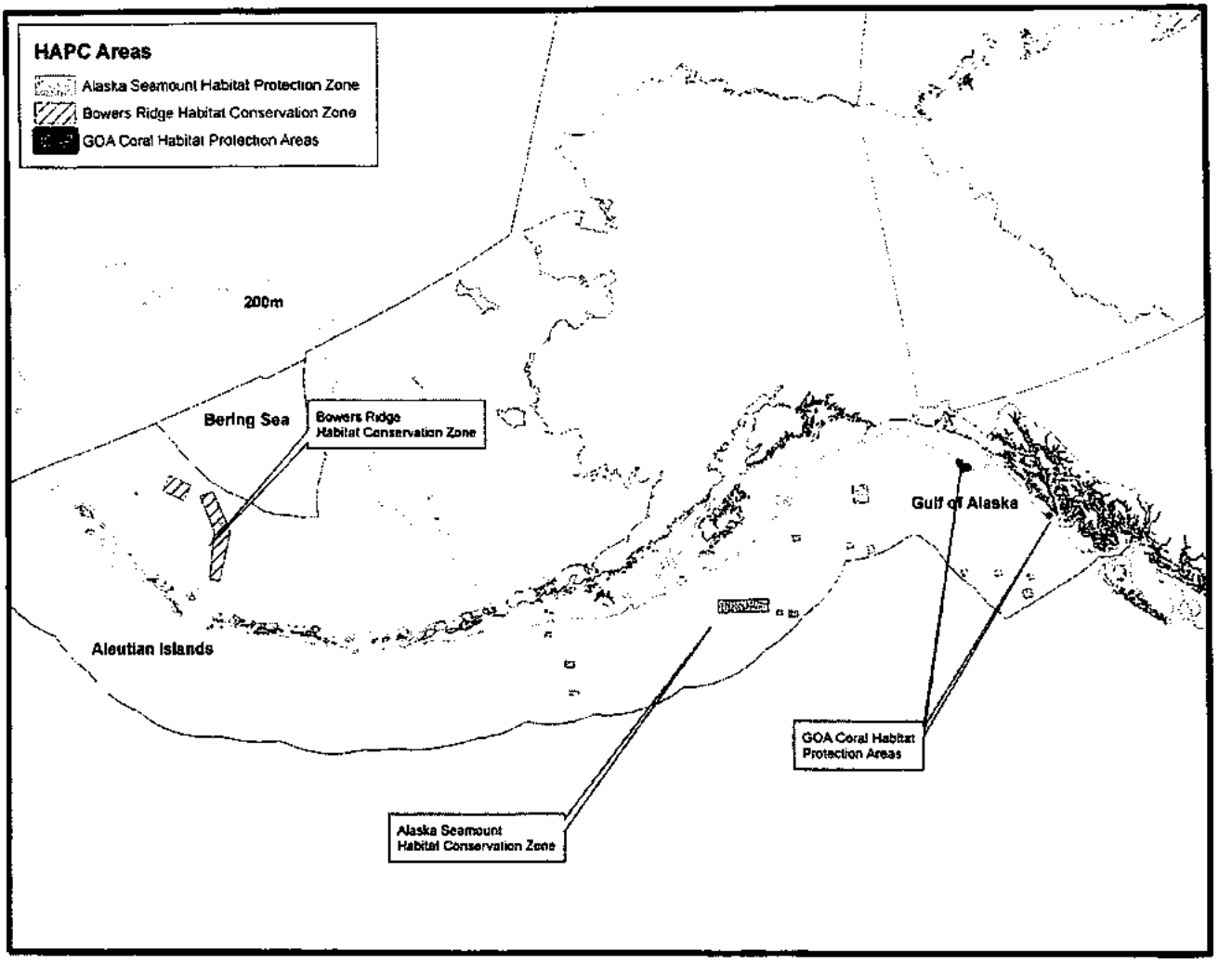

Figure 6.—MPA's proposed to protect habitat areas of particular concern.

Pass, Cook Inlet, and Copper River net fisheries.

The original Salmon FMP adopted this regulation, and prohibited all commercial salmon fishing in the EEZ east of long. 175°E and west of Cape Suckling (long. 144°W), with the above mentioned exceptions. Only troll gear was allowed in the EEZ east of Cape Suckling. In 1990, the Salmon FMP was revised to include the area west of long. 175°E, and prohibit all commercial salmon fishing in that area as well (NPFMC, 1990), thereby increasing the total MPA area to about 5,467,420 km^2 (1,594,000 n.mi.^{2}), not including the EEZ area of the Chukchi and Beaufort Seas (Fig. 7).

Most salmon stocks originating from Alaska rivers (except in western Alaska) increased to high run sizes during the 1980's and 1990's. Although high-seas interception may have affected the run sizes in the 1970's, in more recent years the primary factor influencing run sizes of Alaska salmon is thought to be environmental conditions (Adkison and Finney, 2003).

Chinook Salmon Savings Area

The incidental catch of salmon in non-salmon fisheries has long been a concern to fishery managers and state residents, particularly those in western Alaska who depend on salmon for income and subsistence. The original BSAI Groundfish FMP included provisions that prohibited the retention of salmon. In 1982, the first amendment to the plan established a bycatch limit for Chinook salmon, *Oncorhynchus tshawytscha*, with the available bycatch amounts apportioned to foreign nations with fishing fleets participating in the groundfish trawl fisheries. Once a nation's limit was reached, seasonal area closures were triggered, thus prohibiting that nation's fleet from fishing in the prescribed area. The overall Chinook salmon bycatch limit was further reduced in 1983, but the growing joint venture fleet, and later the fully domestic fishery, offset these reductions.

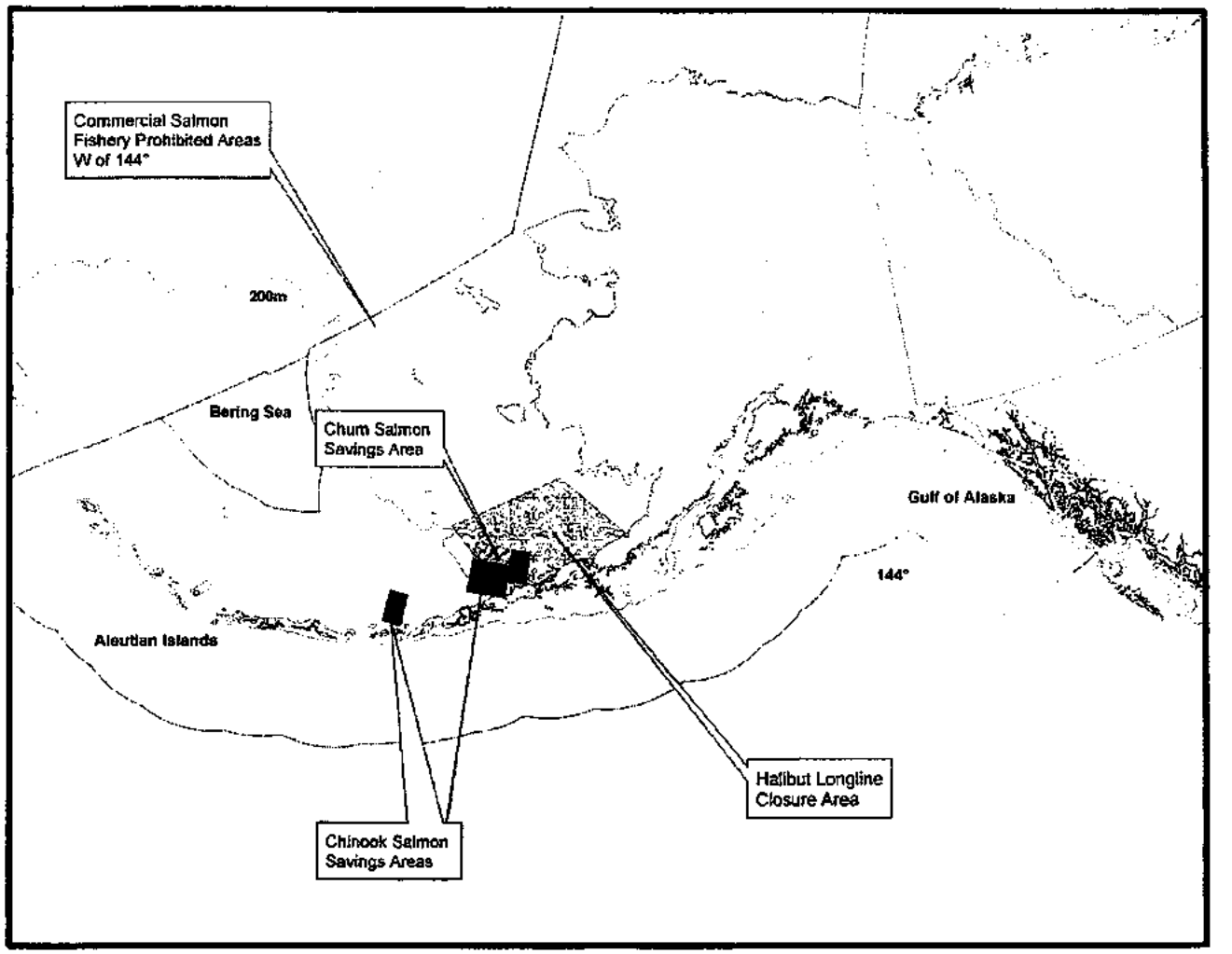

Figure 7.—MPA's designed to reduce impacts on vulnerable stocks of salmon and halibut.

Low Chinook salmon runs in the Nushagak, Yukon, and Kuskokwim rivers in the late 1980's and early 1990's prompted the Council to reexamine measures to control salmon bycatch in groundfish fisheries. Spatial analysis of groundfish observer data provided information on areas that had consistently high bycatch rates of Chinook salmon. In 1995, the Council adopted BSAI Groundfish FMP Amendment 21b, that established three areas in the Bering Sea that would close to all trawling when a bycatch limit of 48,000 fish was taken (Fig. 7). The purpose of the bycatch controls for Chinook salmon was to prevent extremely high bycatch amounts that could raise serious conservation or allocation issues. With the controls in place, Chinook salmon bycatch equated to less than 2.7% of the returning adult population to western Alaska systems (Witherell et al., 2002).

In 1999, the bycatch limit trigger was further reduced to 29,000 salmon taken in the walleye pollock fishery by Amendment 58. In addition, observer data had indicated low bycatch rates of Chinook salmon in the area south of the Pribilof Islands, so this component area of the Chinook Salmon Savings Areas was removed from the MPA (NPFMC, 1999). The prospect of bycatch limits triggering area closures and resulting in forgone catches and added operational costs, provided an incentive for fishing vessels to share information and avoid areas of high salmon bycatch rates, which developed into an industry funded bycatch avoidance program (Haflinger, 2004).

Since the implementation of Amendment 58, the incidental catch of Chinook salmon in groundfish fisheries remained relatively low through 2002. In 2003, nearly 55,000 Chinook salmon were taken as bycatch, thereby triggering closures of the Chinook Salmon Savings Areas for the first time. The closures were triggered again in 2004, a year when over 62,000 Chinook salmon were

taken. It appears that these bycatch levels were likely a result of very high abundance of salmon, as indicated by strong runs of Chinook salmon in the Yukon and nearby drainages in 2003–04, with several escapements near all time highs (ADFG, 2004). Given these high bycatch levels, combined with the fact that the walleye pollock fishery now operates in a cooperative[11] fashion and implements a real-time salmon bycatch avoidance program (Haflinger, 2004), the Council reexamined the regulations and decided it was time to try a slightly different approach to controlling salmon bycatch.

In October 2005, the Council approved BSAI Groundfish FMP Amendment 84 to modify the existing bycatch reduction measures for Chinook salmon and chum salmon, *Oncorhynchus keta*. If approved by the Secretary of Commerce, Amendment 84 will allow the pollock fleet to use their rolling "hotspot" closure system to avoid salmon bycatch. The rolling hotspot system allows the participating fleet to respond quickly given indications of areas of high salmon bycatch and penalizes offenders with weekly area closures if bycatch rates are excessively high (NPFMC, 2005b). Although the regulatory salmon savings area triggers and closures would remain in effect, participants in the rolling hotspot system would be exempted from compliance with savings area closures. Continuation of this exemption would be subject to Council approval and review of the effectiveness of a rolling hotspot system.

Chum Salmon Savings Area

Western Alaska chum salmon runs declined dramatically in the early 1990's, dropping to historically low levels in 1993. In that same year, the incidental catch of chum salmon in groundfish fisheries spiked to a record high of about 243,000 fish. Many were concerned that the trawl fisheries were impacting the salmon returns, and the Council voted to move ahead quickly with an analysis to expand observer coverage on all trawl vessels and to examine the use of area closures to control chum salmon bycatch. Analysis of groundfish observer data indicated spatial and temporal patterns of chum salmon bycatch in trawl fisheries. In April 1994, based on this analysis, the Council requested that NMFS take emergency action to close a 17,150 km^2 (5,000 $n.mi.^2$) area in the southeast Bering Sea once a specified bycatch amount was attained (Fig. 7).

The emergency action was further developed into a permanent regulation, and in January 1995, the Council adopted the Chum Salmon Savings Area as BSAI Groundfish FMP Amendment 35. The Chum Salmon Savings Area is closed to all trawl fishing for the entire month of August (the time of year when bycatch had historically been the highest). In addition, the prescribed area remains closed or closes again after 1 September if 42,000 non-Chinook salmon (virtually all chum salmon) are taken as bycatch in the southwestern area of the Bering Sea.

Bycatch of chum salmon has fluctuated over the years, but until recently it had not reached the levels seen prior to the implementation of this MPA. Average annual chum salmon bycatch was 69,322 during 1990–2001 (Witherell et al., 2002), but it increased every year thereafter to over 465,000 chum salmon in 2004, triggering closures of the Chum Salmon Savings Area during 2002–04 (NPFMC, 2005b). Changes in annual bycatch amounts have been attributed to changes in chum salmon abundance, establishment of the Chum Salmon Savings Area and other regulatory changes, as well as bycatch avoidance measures and operational changes made by the fishing fleet (Witherell et al., 2002).

As previously mentioned, BSAI Groundfish FMP Amendment 84 will allow participants (i.e. the pollock fleet) in a rolling hotspot system to be exempted from compliance with savings area closures. If a cooperative chose not to participate in the system, that cooperative would be subject to the annual Chum Salmon Savings Area closures in August as well as additional closures if triggered. In addition, Amendment 84 would release the nonpollock fleet from the burden of potential closures, given their relatively low contribution to the total number of chum salmon taken incidentally in BSAI trawl fisheries (NPFMC, 2005b).

Halibut Longline Closure Area

Beginning in 1967, the International Pacific Halibut Commission (IPHC) designated IPHC Regulatory Area 4E (Bristol Bay) as a halibut nursery area and prohibited all fishing for halibut year-round within the area (IPHC, 1968). The closure extended south and east of the Pribilof Islands to the westernmost point on Unimak Island. The halibut stock in the Bering Sea had declined to very low levels in the early 1960's, and regulations were being adopted to rehabilitate the stock (reduced fishing periods, prohibition on retention by trawls, minimum size limit, closed areas to longline halibut fishing, and closures to foreign trawl fisheries). The halibut longline closure area was known to have an abundance of juvenile halibut (Best, 1969), and tagging studies done in 1959 showed that halibut migrate from the Bering Sea to the Gulf of Alaska (IPHC, 1978).

At the time this MPA was established, Japanese and Soviet vessels were prosecuting trawl fisheries on the Bering Sea shelf targeting yellowfin sole, other flatfish, and Pacific cod, and the establishment of a halibut nursery area closure may have provided some leverage for the U.S. representatives negotiating bilateral fishing agreements with national governments of foreign fleets. Closure of areas to foreign fleets was the primary management measure used at the time, and the resources targeted by domestic fishermen (halibut, red king crab, and salmon) were of concern for U.S. negotiators (Fredin[2]).

The boundaries of the halibut longline closure area have been modified a couple of times since it was first established (Hoag et al., 1993). The western bound-

[11]The American Fisheries Act of 1998 contained specific provisions for the BSAI pollock fleet to form fishery cooperatives (contractual entities consisting of groups of fishing vessels). Each cooperative receives an annual allocation of quota based on the catch histories of its member vessels. The cooperative allocations end the "race for fish" since each cooperative may fish its quota at any time during the season. Cooperative fishing timing and location choices can be made to improve revenues, reduce operating costs, and reduce bycatch.

ary of the area was moved south and east in 1983 to provide opportunities for halibut fishing in the vicinity of the Pribilof Islands. In 1990, the northeastern part of the closure area was opened to allow halibut fishing opportunities for local Bristol Bay communities. Although adult halibut abundance was low in the area, a study by IPHC suggested that few juvenile halibut would be incidentally captured (Gilroy and Hoag, 1993). The current configuration of the halibut longline closure area is shown in Figure 7.

The benefit of the closure area to the halibut stock has not been fully evaluated. Although the area does contain a fair amount of juvenile halibut, it is unknown to what degree these juveniles contribute to the spawning stock or to the directed fishery. The overall protection for adult halibut provided by the closure may be minimal, because few fishermen would be interested in fishing for halibut there anyway, given the low abundance of adults occupying the closed area (Gilroy and Hoag, 1993). Nevertheless, the area remains closed, and combined with the domestic trawl closures in Bristol Bay, does provide some degree of refuge for juvenile halibut (Williams[12]).

Herring Savings Areas

Most Pacific herring stocks in the Bering Sea declined following the passage of very strong 1977–78 year classes and poor production in subsequent years. Several stocks were projected to decline below minimum threshold levels established for commercial fisheries and potentially affect subsistence fisheries, both of which are important to many western Alaska coastal villages. Further, as the stocks declined, the percentage of the Pacific herring population taken annually by trawl fisheries (particularly the midwater walleye pollock fishery) had increased to 4–7% annually. Given these changes and the importance of Pacific herring to the marine ecosystem, together with associated fishery reductions and concerns for maintaining traditional subsistence herring fisheries, the Council initiated an analysis of measures to control Pacific herring bycatch in trawl fisheries.

In September 1990, the Council adopted Amendment 16a to the BSAI Groundfish FMP, and the regulations were implemented in July 1991. The amendment established a biomass-based bycatch limit for Pacific herring and a series of time and area closures that would be triggered by attainment of the bycatch limit by trawl fisheries (Fig. 8). The bycatch limit was established at 1% of the eastern Bering Sea herring population biomass projection. The limit was further allocated among trawl fisheries, so that attainment of the limit by one target fishery would not impact other trawl target fisheries. The time/area closures established were based on spatial analysis of bycatch rates and the seasonal migration of herring, so the closure areas encompass the times and places where herring are concentrated.

The measures to control herring bycatch appear to be successful, and may have contributed to a substantial reduction in bycatch over time. In 1994, for example, 1,700 t of herring were taken as bycatch; by 2002, herring bycatch had been reduced to only 134 t (NPFMC, 2004a). Closures of the Herring Savings Areas were triggered each year from 1992 through 1995 (Witherell and Pautzke, 1997), but no closures have been triggered in recent years.

Tanner Crab and Red King Crab Bycatch Limitation Zones

The bycatch of crabs in trawl fisheries has been a long-standing issue for fishermen targeting crabs with pot gear. In 1983, bycatch limits for king crabs and Tanner crabs were established for foreign trawl fisheries operating in the Bering Sea. In 1997, domestic fisheries and joint ventures were included in the crab bycatch limit regulations under BSAI Groundfish FMP Amendment 10. The regulations specified Tanner crab bycatch limits for areas east of long. 165°W (Zone 1) and areas west of long. 165°W (Zone 2), and bycatch limits for red king crab in Zone 1 (Fig. 8). Although the boundaries for the zones have not been modified, the bycatch limit amounts have been revised many times (Amendment 12a in 1990, Amendment 16 in 1991, Amendment 37 in 1996, Amendment 41 in 1997, Amendment 57 in 1999).

Bycatch limits have controlled the incidental catch of king and Tanner crabs in trawl fisheries. Directed trawl fisheries, particularly those targeting flatfish species, have been closed in lucrative fishing areas when limits are attained. Closures have been triggered for at least one of the specified trawl fisheries in every year since implementation. However, in more recent years, closures have been infrequent, due in part to changes in the distribution and abundance of Tanner crab and the establishment of no-trawl MPA's in the Bristol Bay area, along with reductions in total allowable catch limits for flatfish species.

Snow Crab Bycatch Limitation Zone

By the early 1990's, snow crab, *C. opilio*, had become the mainstay species of the Bering Sea crab fleet; abundance and prices for this species had sharply increased, while the other crab species had declined. Recruitment of large snow crab, however, had dropped off by 1996, and catch limits were scaled back to 23,133 t (51 million pounds), down substantially from the 1992 limit of 151,045 t (333 million pounds). Crab fishermen claimed financial distress, and requested that the Council limit the incidental take of snow crab in trawl fisheries.

In response, the Council formed a small stakeholder committee, consisting of three crab fishery representatives and three representatives of the trawl sector, to examine available data and recommend a solution. The committee was provided a spatial analysis of survey data for snow crabs, and trawl bycatch data. Their recommendation for a trawl closure area that would be triggered by an abundance-based snow crab bycatch limit, was adopted by the Council as Amendment 40, and implemented in 1998. This area, deemed the Snow Crab Bycatch Limitation Zone, encompasses 308,700 km^2 (90,000 n.mi.^{2}) (Fig. 8).

As an allocation measure, the MPA has eased the concerns of crab pot fishermen regarding the observed

[12]Williams, Gregg, IPHC, Seattle, Wash. Personal commun. 2006.

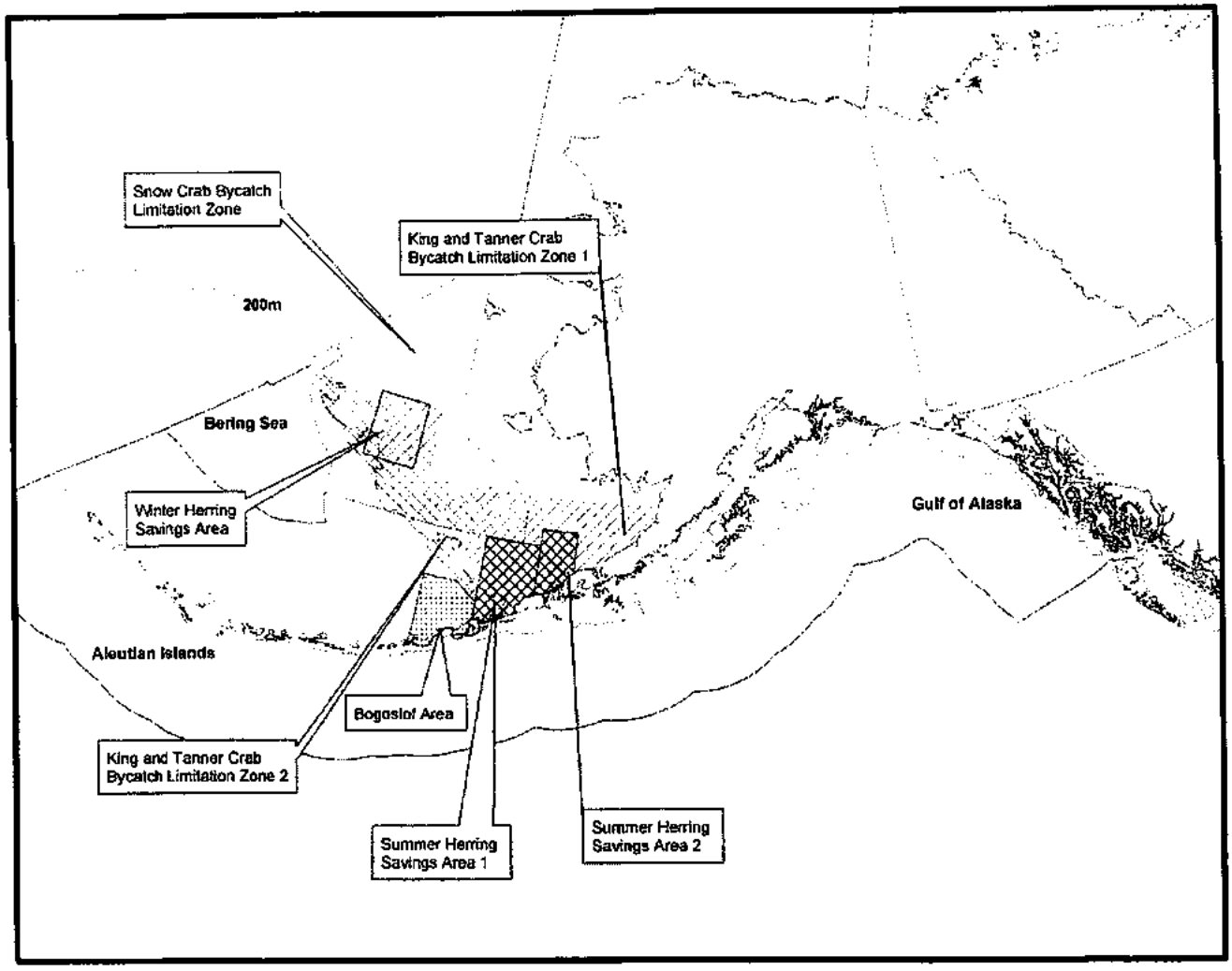

Figure 8.—MPA's designed to reduce impacts on vulnerable stocks of crabs, herring, and pollock.

bycatch of snow crab, although some have expressed reservations about "unobserved mortality" due to trawl gear interactions. Trawl fisheries have adapted to the limits, and to date have not triggered closure of the Snow Crab Bycatch Limitation Zone.

As a conservation measure, the Snow Crab Bycatch Limitation Zone appears to offer only minor benefits, as the bycatch amounts represent less than 0.1% of the population (Witherell et al., 2000). The snow crab stock has declined substantially since 1997 and is currently considered to be below the established minimum stock size threshold due to lack of recruitment (NPFMC, 2004c).

Bogoslof Area

Catch limits for walleye pollock in the Eastern Bering Sea originally applied throughout the management area, but research began to indicate that two separate stocks occupied the Bering Sea. One of these stocks, the Aleutian Basin stock, was projected to decline substantially in the early 1990's. Research had indicated that walleye pollock in international waters of the "Donut Hole" and the Aleutian Basin portion of the U.S. EEZ were the same population and that the area around Bogoslof Island was thought to be the principal spawning area for the Aleutian Basin pollock stock (Dawson, 1989). To prevent the possibility of overharvesting pollock during the 1991 season, the Council recommended emergency action to establish the Bogoslof District with restrictive catch limits.

To further protect the Aleutian Basin pollock stock, the United States passed the Central Bering Sea Fisheries Enforcement Act in 1992 to prohibit U.S. fishermen from fishing in the Donut Hole. Unfortunately, the stock continued to decline, and by the end of the year, all the countries involved in harvesting pollock (United States, Russia, China, South Korea, Japan, Poland) had agreed to voluntarily suspend fishing in the Donut Hole in 1993 and 1994. In 1994,

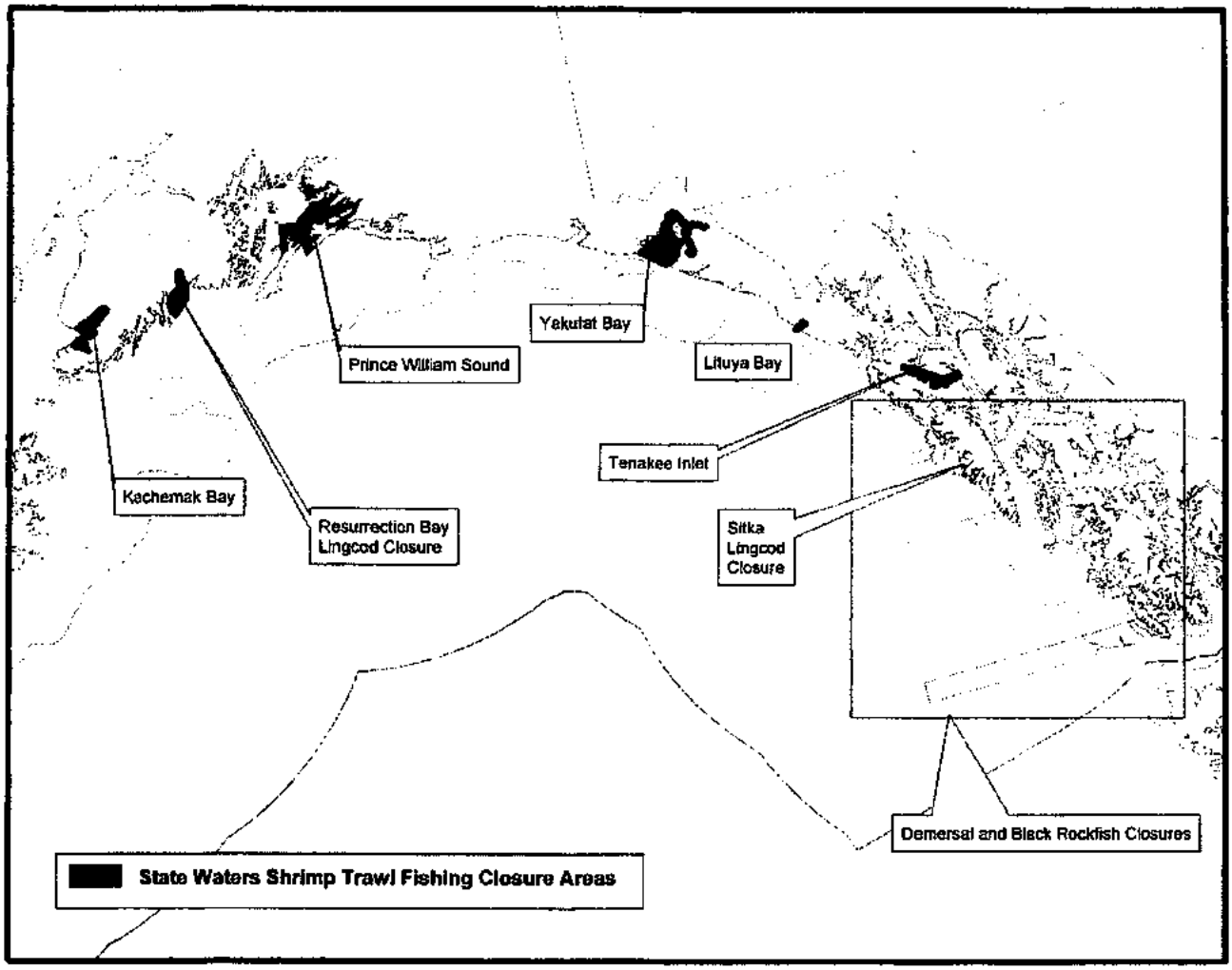

Figure 9.—MPA's designed to reduce impacts on vulnerable stocks of lingcod, rockfish, and shrimp.

all these parties signed the "Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea" to prohibit fishing for walleye pollock until the stock reached a threshold of 1.67 million t. The Convention further specified that the pollock biomass in the Bogoslof area is deemed to represent 60% of the Aleutian Basin pollock biomass. In other words, when the Bogoslof area pollock biomass exceeds one million t, a fishery would be allowed in the Donut Hole.

No pollock fishing has been allowed in the Bogoslof District since it became established in 1992 by BSAI Groundfish FMP Amendment 17. As part of the Steller sea lion protection measures implemented beginning in 2002, all fishing for walleye pollock, Pacific cod, and Atka mackerel was prohibited in the Bogoslof area (Fig. 8). Despite the closure and prohibition on walleye pollock fishing, the Aleutian Basin pollock stock biomass remains at very low levels (NPFMC, 2004b).

State Waters Groundfish Closures

Several groundfish closures in state waters of the Gulf of Alaska were enacted to protect species vulnerable to overexploitation. These include lingcod populations that have proven vulnerable to intense fishing pressure near coastal communities. Two areas were closed to lingcod fishing in the Gulf of Alaska by the Alaska Board of Fisheries in 1997: Resurrection Bay near Seward and most of Sitka Sound (Fig. 9). In a proactive move in 2003, the Alaska Board of Fisheries also closed Sitka Sound and a series of four latitudinal strips on the outer coast of the eastern Gulf of Alaska to commercial harvest of black rockfish, *Sebastes melanops*, where a commercial fishery was developing (Fig. 9). The purpose of this closure was to maintain older year classes, particularly of females that have been shown elsewhere to produce larvae with higher rates of survival (Berkeley et al., 2004). For this

species, the state has management jurisdiction in the EEZ and these closures include Federal and state waters. The Alaska Board of Fisheries also closed Sitka Sound to commercial harvest of demersal shelf rockfish in 1987, as well as areas in the vicinity of Ketchikan (in 1989) and near the towns of Craig and Klawock (in 1991). These closures were to protect heavily exploited populations from directed commercial fishing (O'Connell[13]).

The effects of the state groundfish closures are difficult to assess. The lingcod and demersal shelf rockfish closures likely have had some conservation benefits, although these benefits have not been quantified. The closures have also had some allocation impacts as the resources within these areas were reallocated to recreational users. In the case of the black rockfish closures, the economic effect on commercial fishermen was minimal because the closures were enacted at a time when the fishery in Southeast Alaska was not highly developed.

Shrimp Trawl Closures

The Alaska Board of Fisheries has closed several areas in state waters of the Gulf of Alaska to commercial trawling for shrimp, largely to protect shrimp stocks from excessive exploitation but also to prevent bycatch of crabs and other species. These areas include part of Tenakee Inlet in southeast Alaska, Lituya Bay, and Yakutat Bay, as well as eastern sections of Prince William Sound, and all of Cook Inlet (Fig. 9).

Cultural Resources MPA's

Elsewhere in the United States, cultural resource MPA's are typically shipwrecks, often with historical significance. Alaska has a plethora of sunken vessels, estimated at over 3,000 (McMahon[14]); however, and more uniquely, Alaska has significant subsistence use of marine resources with MPA's designated to conserve some of these uses. Although these MPA's developed for subsistence objectives may not fully meet the MPA Center criteria for MPA's (the primary focus is generally allocation rather than conservation) they are included in this paper because they do have conservation benefits related to preventing depletion of marine resources in local areas. Additionally, they provide access to and sustainable use of cultural resources.

Subsistence Crab Area

The King and Tanner Crab FMP prohibits commercial crab fishing within 18.5 km (10 n.mi.) of King Island, Little Diomede Island, and Saint Lawrence Island. The objective of this MPA is to allocate the nearshore crab resources to local people (primarily Alaska Natives) of these islands who take them for subsistence use. The prohibition on commercial fisheries in this area reduces the potential for discard mortality and the risk of localized overexploitation of crabs in these nearshore areas. Research has shown that the shallow waters (<40 m) around Saint Matthew Island contain high densities of ovigerous female blue king crab; presumably nearshore areas are also important for other populations of blue king crab in the northern portion of their range (NPFMC, 2000).

Subsistence Halibut Regulatory Areas

Areas have been set aside to reduce competition for halibut and ensure access to the halibut resource by local subsistence users. By 1997, increased fishing effort and halibut removals from Sitka Sound by commercial and charter fleets were causing increased competition for halibut and thus creating difficulties for personal use and subsistence fishermen (i.e. the local people who harvest halibut and other fish for food). To address this problem, the Alaska Board of Fisheries appointed a task force of community representatives to prepare a local area management plan. The plan was developed with the objective to reserve access to halibut in Sitka Sound for the fishermen who were not as able to fish outside the Sound, namely the nonguided anglers, and the personal use and subsistence fishermen. In 1998, the Council adopted the plan, and prohibited halibut fishing by all commercial fishing vessels in Sitka Sound, except that vessels ≤10.7 m (35 ft) and charter fishing vessels could fish within the area during June, July, and August. During the remainder of the season, commercial fishing vessels ≤10.7 m (35 ft) are prohibited from harvesting more than (0.91 t) 2,000 lbs. of halibut within Sitka Sound per fishing trip.

In 2001, the Council adopted a halibut subsistence fishery program to legalize the harvest of halibut by Alaska Native and rural Alaskans (both Natives and non-Natives living in rural communities) throughout the state for personal consumption and traditional barter and trade. The program allows harvest of halibut with longline gear, and up to 20 halibut per day can be harvested in most areas. To address concerns about localized depletion of halibut from increased fishing pressure (due to easy access via the road system), the state and Council adopted regulations to prohibit halibut subsistence harvest in most of Cook Inlet waters. This area was already subject to high fishing pressure for halibut from anglers fishing from private and charter vessels. Although subsistence fishermen are restricted within the Cook Inlet area, they are granted new opportunities throughout the remainder of the State's coastal areas.

Subsistence Sea Cucumber Areas

Seventeen areas in state waters of southeast Alaska, including bays or sections of inlets, were closed to commercial harvest of sea cucumbers in 1990 to provide opportunities for subsistence users (Fig. 10). This action was taken following a dramatic increase in commercial sea cucumber landings when the fishery was first developed (Woodby et al., 1993). Closed areas were created in most of the region's fishery management districts. Some of these protect high density sea cucumber habitats, especially in southern southeast Alaska, and were located near subsistence communities. These closures were enacted prior to full development of the commercial fishery in those areas; hence, the economic and social impacts were minor, as status quo was maintained.

[13]O'Connell, Victoria, ADFG, Sitka, Alaska. Personal commun. 2005.

[14]McMahon, D., Alaska Dep. Nat. Resour., Juneau. Personal commun. 2005.

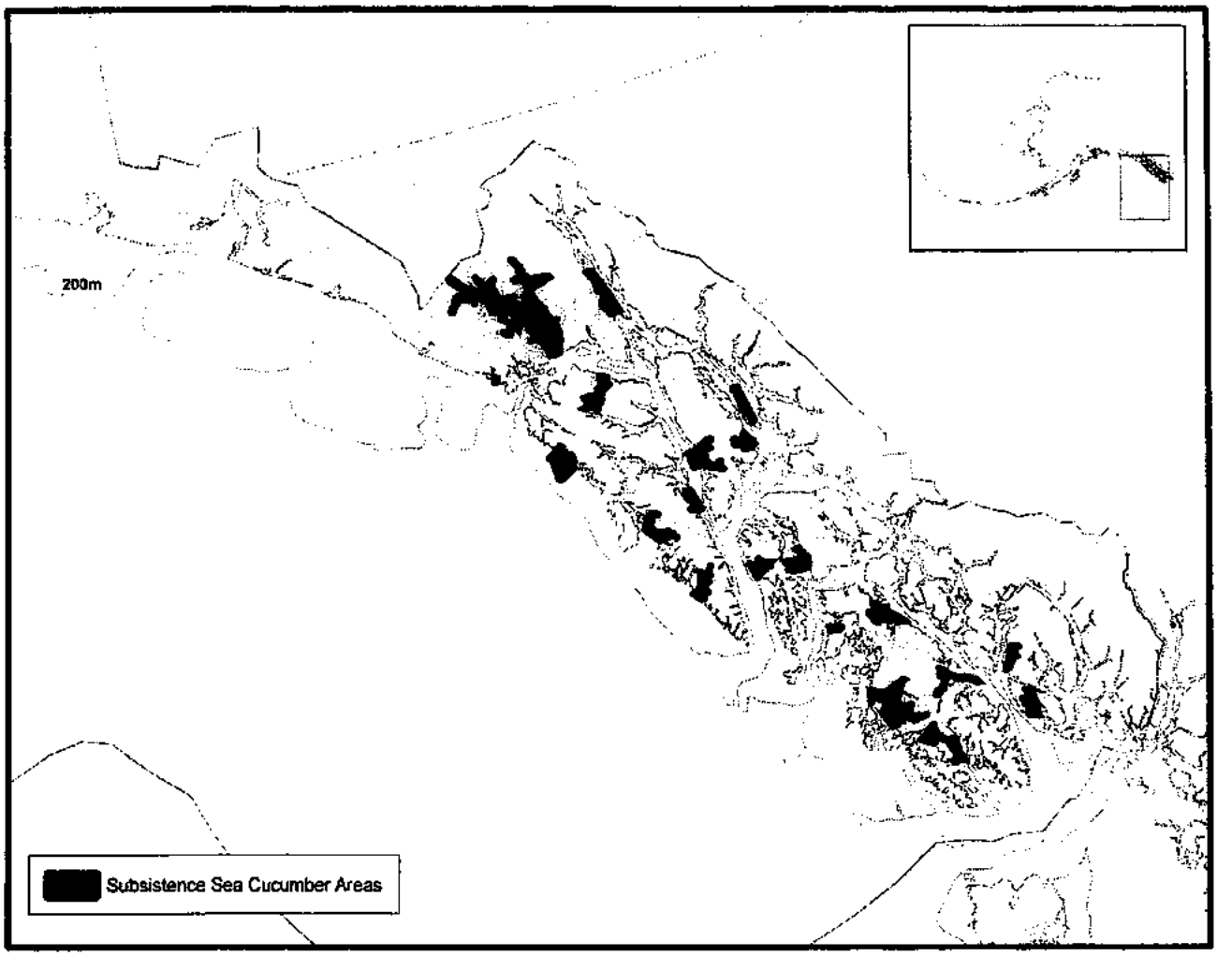

Figure 10.—MPA's designed to protect subsistence opportunities for sea cucumbers.

Discussion

Marine protected areas have been a useful tool to Federal and state fishery managers in Alaska seeking to meet specific goals, such as limiting bycatch of special species, limiting the interaction with marine mammals, and protecting sensitive seafloor habitat from potential damage due to fishing activities. Many of the MPA's were designed to meet multiple objectives. In total, there are currently over 40 named MPA's, many of which include multiple sites. Taken together, the MPA's encompass virtually all Federal waters off Alaska. Most of the MPA's include measures to prohibit a particular fishery or gear type (particularly bottom trawls) within the area on a year-round basis.

In combination with the MPA's established in Federal waters, the numerous and extensive areas in state waters closed to trawling, dredging, or other gear types (Woodby et al., 2002) provide substantial protection for marine resources and their habitats off Alaska. These areas include a wide variety of management measures from limited restrictions on particular fisheries to no-transit zones where all vessels, including fishing vessels, are prohibited from even entering within 5.6 km (3 n.mi.) of all Steller sea lion rookeries along the Aleutian Islands east to Prince William Sound.

In most cases, MPA's have successfully achieved their objectives. Sustainable production has been maintained in the groundfish fisheries, and conservation and allocation issues involving the incidental catch of vulnerable species have been addressed. The success of MPA's at achieving habitat conservation is more difficult to evaluate. Because almost no research has been done to measure benthic changes before and after MPA implementation, we are left to rely on population responses to assess impacts. In some cases (e.g. the Bristol Bay Trawl Closure Area), the positive effects on

stocks can be attributed to some extent on MPA regulations. In other cases, such as the Pribilof Islands Habitat Conservation Area, the signals are mixed. The current environmental regime appears to be preventing full recovery of the Pribilof blue king crab stock, whereas the Pribilof red king crab stock has increased to high levels (NPFMC, 2004c).

Before new MPA's are implemented, cumulative impacts need to be fully considered. Regulations that prohibit or restrict fishing activity in one area are likely to result in additional fishing effort in the remaining open areas, potentially creating other problems. The court-ordered closure of Steller sea lion critical habitat to trawling in 2000, for example, resulted in an increase in bycatch of salmon (Witherell et al., 2002). Other potential effects of implementing additional MPA's include more complex regulations, additional operating costs, and reduced operating flexibility for fishermen.

Evaluation of MPA's after they have been implemented is essential for monitoring performance and to be responsive to new information (Coleman et al., 2004). Several MPA's off Alaska have been reevaluated after implementation, and adjustments made to make them more effective. For example, the Bristol Bay closure area was reevaluated in 1995 relative to its ability to protect juvenile king crab and their habitats, and adjustments were made in the boundaries of the area to encompass the full range of known young-of-the-year habitat (Witherell and Harrington, 1996). In 1999, the Council modified the Chinook Salmon Savings area boundaries after spatial analysis showed that areas of high bycatch rates had changed over the years. More recently, several MPA's in the Gulf of Alaska designed for Steller sea lion protection were modified in response to updated research.

Research is also required to fully evaluate the effectiveness of existing MPA's. For example, the Steller sea lion mitigation MPA's clearly provide some conservation benefits to deep-water coral and sponge assemblages in the Aleutian Islands, but the level of protection has not been quantified. Ongoing direct observations using submersible transects may help provide estimates for coral conservation in the Aleutian Islands (Woodby et al., 2005). Similar research should be done in the other closure areas to evaluate the effectiveness of the existing MPA's at meeting their objectives, and to ascertain other ecological effects of implementing MPA's.

Compliance with MPA regulations off Alaska appears to be very high due to a combination of factors, including strong enforcement presence, an industry-funded onboard observer program, satellite tracking of positions with vessel monitoring systems (VMS), and the availability of alternative fishing opportunities. The U.S. Coast Guard patrols the North Pacific with planes, cutters, and helicopters, and provides regular feedback to the Council on enforcement presence (e.g. number of C-130 flights, cutter days) and offers advice relative to the enforcement aspects associated with MPA's early in the development process. NOAA Enforcement agents also report on violations, including MPA violations. To date, however, very few intentional violations of MPA regulations have been reported.

Compliance is also affected by the presence of onboard observers. The NMFS comprehensive observer program for the groundfish fisheries requires that all vessels larger than 38.1 m (125 ft) (length overall) carry an observer, and vessels 18.3 m (60 ft) to 38.1 m (125 ft) carry an observer 30% of their fishing time. Vessels participating in scallop fisheries and in Bering Sea crab fisheries carry observers as well. Although the observers' primary duties are to measure total catch and discards, they do record vessel positions, and their logbooks can become the basis for prosecution.

VMS is now widely used to monitor fishing vessel positions off Alaska. Regulations require that vessels fishing for walleye pollock, Pacific cod, and Atka mackerel carry an operating VMS at all times. Because nearly all trawl vessels fish for one of these species during the year, and many of the longline vessels fish for Pacific cod, most of the fleet potentially affected by MPA regulations can be monitored by VMS tracking. Lastly, because alternative productive fishing grounds, in most cases, can be found in areas outside of existing MPA's off Alaska, there is reduced incentive for violating the regulations.

The MPA's off Alaska were implemented for specific purposes over time, rather than as part of a comprehensive strategy to establish a network of MPA's as apparently envisioned by Executive Order 13158. The MPA Federal Advisory Committee notes that a national system of MPA's would provide an opportunity for individual MPA's implemented under various jurisdictions to produce benefits that extend beyond individual MPA's, such as improved conservation of broadly distributed species whose life cycles span multiple jurisdictions, conservation and enhancement of biodiversity, and protection of ecologically significant processes (Marine Protected Areas Federal Advisory Committee, 2005). As noted in this paper, the current suite of MPA's off Alaska likely provides these benefits to some degree.

Although no-take marine reserves have been promoted as an ocean conservation tool by many in the scientific and environmental community (Allison et al., 1998; Agardy, 2000; Roberts et al., 2005), fishery managers in Alaska generally have not found a need for such restrictive MPA's, except in special situations to address habitat conservation or marine mammal disturbance issues. Unlike many other areas of the world, the existing management program for Alaska fisheries addresses the objectives for implementing no-take marine reserves as identified by the National Research Council (2001). The ecosystem-based approach utilized off Alaska provides insurance against uncertainty, prevents overexploitation, limits fishing effort, and protects habitats (Witherell et al., 2000). Moreover, extensive unfished areas of the continental shelf, slope, and basin region serve as de facto marine reserves.

Some scientists and environmentalists assert that fully protected marine reserves should be immediately applied as a primary management tool (Lubchenco et al., 2003), covering 20% or more of all biogeographic regions and habitats

(Roberts et al., 2003). We believe that such sweeping measures may not be practical or necessary in all situations. A network of extensive no-take reserve areas, encompassing 20% to 50% of available habitats within each management region off Alaska, was evaluated and considered to mitigate the possibility of the fisheries having a detrimental biological and ecosystem impact, but the network of marine reserves was rejected as unnecessary given the precautionary management program for Alaska groundfish fisheries using more traditional tools (NMFS, 2004b). Although the analysis noted that implementation of such extensive no-take marine reserves, together with quota reductions, may provide positive effects on biodiversity and ecosystem processes, the social and economic impacts to fishery participants and coastal communities would have been devastating (NMFS, 2004b).

Without scientific studies to provide evidence that additional no-take reserves are needed off Alaska to further conserve biodiversity, proposals to implement no-take marine reserves solely for this reason may be viewed with skepticism. Field studies off Alaska to understand the effects of no-take marine reserves on biodiversity and ecosystem processes should be a research priority, and these studies should be developed and conducted in a cooperative manner with fishery participants. Should these studies find that no-take marine reserves enhance long-term sustainability of fish stocks, we would anticipate that fishery managers and the Alaska fishing industry would not only accept, but also actively seek implementation of this management tool.

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Implementing The National System of Marine Protected Areas:

Summary of Nomination Process*

www.mpa.gov

The U.S. is implementing a comprehensive, science-based and effective national system of marine protected areas (MPAs). The national system will include eligible existing MPAs across all levels of government to protect important habitats and resources. For more information, visit www.mpa.gov.

*INFORMATION IN THIS FACT SHEET NOT APPLICABLE UNTIL LATE NOVEMBER 2008

Nomination Process for Existing Sites to Join the National System

The nomination process for the National System of Marine Protected Areas (MPAs) is designed to be transparent, science-based, and to provide an opportunity for public comment. The National Marine Protected Areas Center will be responsible for the technical review of nominations.

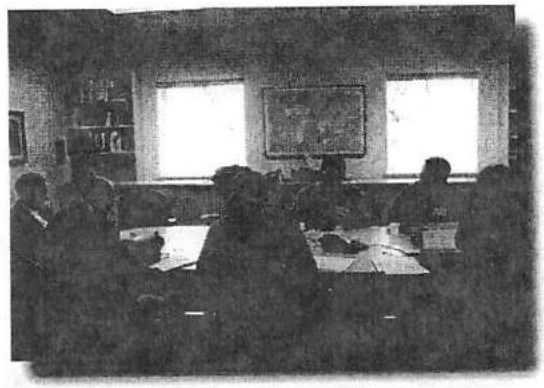
There are three entry criteria for existing MPAs to join the national system (plus a fourth for cultural heritage). Sites that meet the following three criteria (four for cultural heritage) are eligible for the national system:

1. Meets the definition as defined in the *Framework for the National System of Marine Protected Areas of the United States of America.*
2. Has a management plan (can be site-specific or part of a broader programmatic management plan; must have site goals and objectives and call for monitoring or evaluation of those goals and objectives).
3. Contributes to at least one priority conservation objective as listed in the Framework.
4. Cultural heritage MPAs must also conform to criteria for the National Register for Historic Places.

The MPA Center will use existing information from the MPA Inventory to determine which sites meet the first two criteria. These identified sites will be potentially eligible MPAs. The managing entities of potentially eligible MPAs will be sent a nomination package and invited to nominate some or all of their potentially eligible sites for inclusion in the national system. To do so, they will be asked to document how each nominated MPA meets criterion three above.

Ensuring Public Participation

All nominated sites will be available for public comment. The public will be notified through a *Federal Register* notice, information on www.mpa.gov, and other targeted outreach. The MPA Center will receive, evaluate and forward public comment to the relevant managing entity or entities, which will then reaffirm or withdraw the nomination based on public comment received and other factors deemed relevant. After final MPA Center review, mutually agreed upon MPAs will be accepted into the national system.



The National Oceanic and Atmospheric Administration (NOAA) and the Department of the Interior (DOI) will make a public announcement of the first group of MPAs accepted into the national system. MPAs accepted into the national system will also be added to the official List of National System MPAs, which will be made available to the public via the *Federal Register*, the website www.mpa.gov, and other means.

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NOAA's National Marine Protected Areas (MPA) Center's mission is to facilitate the effective use of science, technology, training, and information in the planning, management, and evaluation of the nation's system of marine protected areas. The MPA Center works in partnership with federal, state, tribal, and local governments and stakeholders to develop a science-based, comprehensive national system of MPAs. These collaborative efforts will lead to a more efficient, effective use of MPAs now and in the future to conserve and sustain the nation's vital marine resources.

NATIONAL Marine Protected Areas CENTER

Office of Ocean and Coastal Resource Management, NOAA Ocean Service, 1305 East West Hwy (N/ORM), Silver Spring, MD 20910

The nomination process will remain open after the first group of sites has been accepted. Nominations will be accepted on a rolling basis, with formal updates to the List and public announcements provided on a periodic basis.

DRAFT TIMELINE FOR INITIAL NOMINATION PROCESS:

LATE NOVEMBER 2008:

Announce publication of *Framework for the National System of Marine Protected Areas of the United States of America* and beginning of nomination process.

MPA Center sends out nomination packages to federal, state and territorial MPA managing entities with potentially eligible existing sites.

LATE JANUARY 2009:

Nomination forms due

MID FEBRUARY 2009:

MPA Center makes list of nominated national system MPAs available for public review; notice in *Federal Register* and on www.mpa.gov.

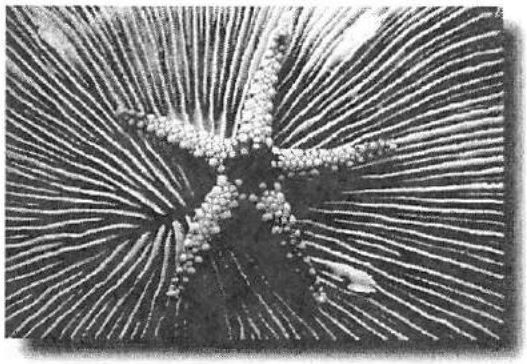
LATE MARCH 2009:

MPA Center and managing entities review public comments received. Managing entities make final determination about which sites to nominate.

MPA Center reviews final nominations to ensure that criteria are met.

APRIL 2009:

MPA Center notifies accepted sites. NOAA and DOI make announcement of first sites to join National System of MPAs. Official List of National System sites posted on www.mpa.gov.



For more information on the National System of Marine Protected Areas, visit www.mpa.gov

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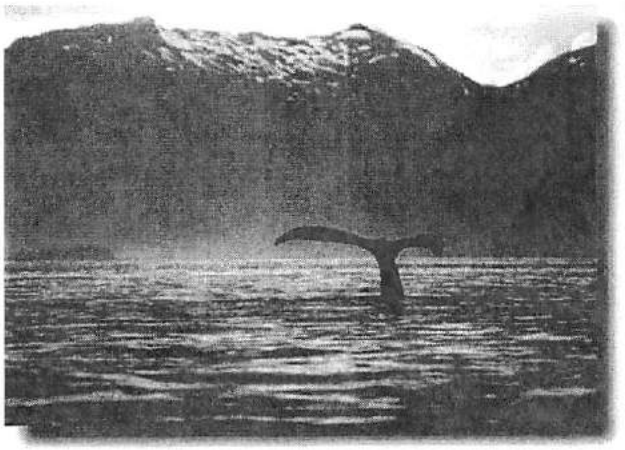
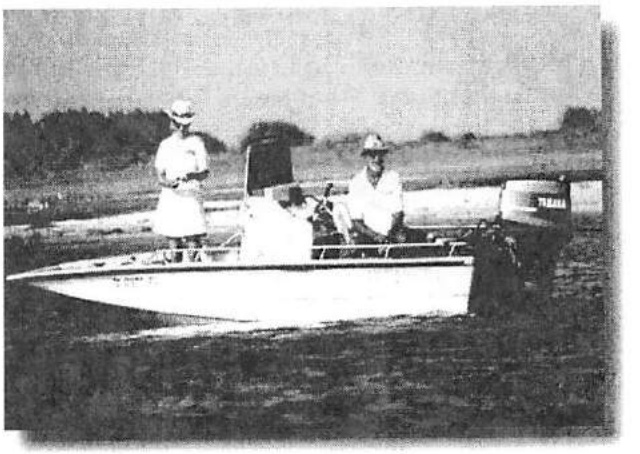
BENEFITS of a National System of Marine Protected Areas

The national system of MPAs provides the first comprehensive mechanism for coordinating MPAs managed by diverse federal, state, territorial, tribal and local agencies to work toward national conservation objectives. The system will benefit the nation's collective conservation efforts and participating MPAs, providing those sites with a means to address issues beyond their boundaries. The following list reflects some of the potential benefits from the creation and effective management of the national system.



Benefits to Participating MPAs

- **Enhancing Stewardship** - The national system will help protect MPAs against the harmful effects of activities through enhanced regional coordination, public awareness, site management capacity, and recognition of these MPAs as important conservation areas.
- **Building Partnerships** - By establishing a mechanism for coordination around common conservation objectives, the national system provides opportunities for MPAs to work together more effectively. The system will also build partnerships between member MPAs and related ocean management initiatives, such as ocean observing systems, ocean mapping, navigational charting, and others.
- **Increasing Support for Marine Conservation** - The designation of MPAs as part of the national system can enhance the stature of these sites within their managing entities and their local communities, as well as nationally and internationally. This designation will also build support for investment in national system MPAs. National system MPAs may benefit from the same type of support and recognition that MPAs who joined international networks have received; such as the World Heritage Sites, Ramsar Wetlands, or other U.S. national level systems like the National Estuarine Research Reserves, National Marine Sanctuaries, National Parks and Wildlife Refuges.
- **More Effective and Efficient Outreach** - The national system will be an important mechanism for increased public awareness and understanding of the importance of marine resources and conservation efforts. Coordinated outreach efforts will increase the impact of outreach by individual MPAs, and could result in cost savings. Including eligible, but currently little known, sites in the national system could bring increased recognition and visibility to these areas.

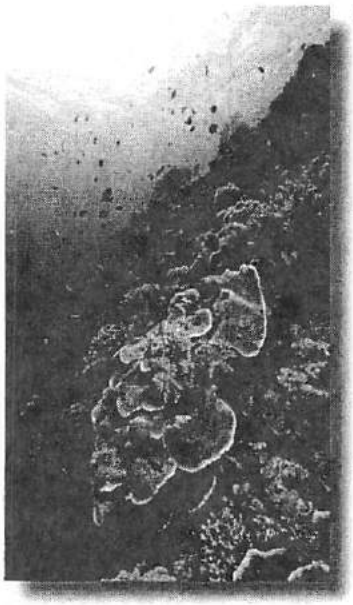


- **Promoting Cultural Heritage** - Participation in the national system elevates and enhances the recognition of and appreciation for the cultural heritage value of MPA sites, an often overlooked focus of marine conservation.
- **Protecting MPA Resources** - Section 5 of Executive Order 13158 calls for federal agencies to "avoid harm" to the natural and cultural resources protected by MPAs that are part of the national system. Federal agencies are required to identify their activities that affect the natural and cultural resources protected by individual national system MPAs, and, to the extent permitted by law and the maximum extent practicable, avoid harm to those resources. These activities are to be accomplished through existing resource management or review authorities.

Benefits to the Nation

- **Protecting Representative Ecosystems and Resources** - The national system will significantly boost ongoing efforts to preserve the natural and cultural heritage of the United States by ensuring that the diverse characteristics of the nation's seas are conserved for future generations in a systematic way. The representation of all ecosystem or habitat types in all the nation's marine regions, which includes the Great Lakes, within a single system will help ensure a full complement of biodiversity, habitat types and representative cultural resources.

- **Enhancing Connectivity Among MPAs** - The national system provides an opportunity to identify and establish networks of MPAs that are ecologically connected. An ecological network of MPAs is a set of discrete MPAs within a region that are functionally connected through dispersal of eggs and larvae or movement of juveniles and adults. These networks would enhance linkages between sources and sinks for many marine organisms, which may be essential for some local populations to persist—an increasingly serious challenge in the face of climate change and other impacts. Planning and analysis at the national and regional scales provides an opportunity to address connectivity for many different marine organisms at different spatial scales.



- **Identifying Gaps in Current Protection of Ocean Resources** - The national system will help identify and highlight gaps in protection of important places where MPAs may be an appropriate tool to meet priority conservation objectives. Regional gap analyses will help inform future planning efforts to create MPAs to fill the identified gaps.

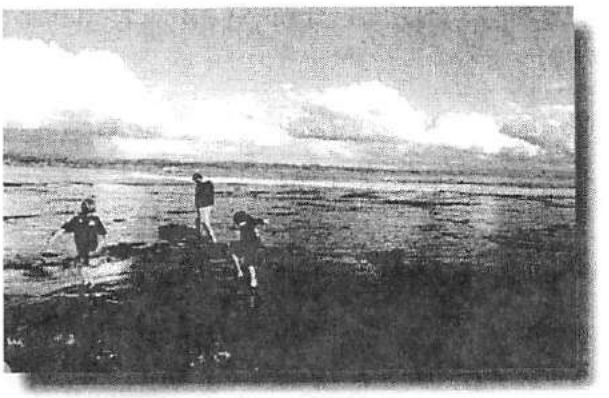
- **Providing New Educational Opportunities** - The creation of the national system will enhance opportunities for natural and cultural heritage education. This may include onsite education and interpretation, as well as classroom and web-based resources. The national system will be a valuable tool for educating students and visitors about the nation's diverse marine and coastal ecosystems and cultural resources. It will also provide a mechanism to share educational materials about resources or management approaches among MPAs.

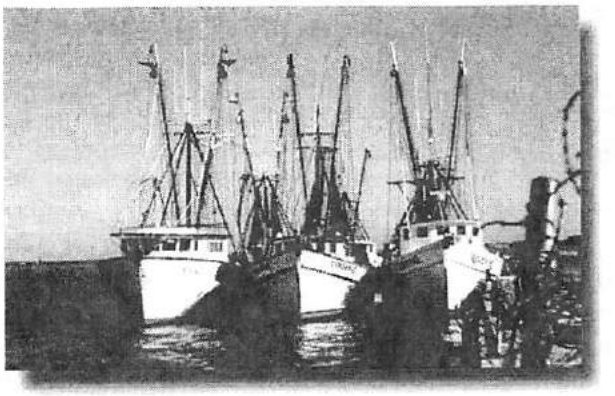
- **Enhancing Research Opportunities** - The national system will provide scientists and managers with more opportunities to understand the dynamics of marine ecosystems and human interactions with them under different management regimes. Increased awareness of the national system may lead to additional funding for research.

- **Improved International Coordination** - By focusing on national objectives, and providing a comprehensive picture of the nation's MPA coverage and focus, the national system will promote more effective links with international MPA programs, encourage the exchange of expertise, and enhance conservation efforts across international boundaries.

Benefits to Ocean Stakeholders

- **Sustaining Fisheries** - One goal of the national system is supporting sustainable production of harvested marine resources. The national system provides a mechanism to coordinate fisheries management activities by regional fisheries management councils, inter-state fisheries commissions, states and tribes with other conservation efforts at the regional scale. This contributes to species recovery, spillover and seeding effects, habitat protection, conservation of old-growth age structure and genetic diversity, as well as providing improved information about access opportunities.
- **Transparent Process for MPA Planning** - The national system outlines a science-based, transparent process for identifying gaps in current protection where new or enhanced MPAs may be needed to address resource conservation needs. The national system does not provide any new authority for establishing or managing MPAs, but lays out design and implementation principles that will guide the development of the system. These include a commitment to balanced stakeholder involvement, respecting local and indigenous values, and adaptive management.
- **Better Planning for Diverse Ocean Uses** - Identifying national system MPAs, as well as identifying areas important for conservation through regional gap analyses, will help inform regional-scale planning and decision making associated with a wide range of ocean uses. This would also contribute to a more predictable regulatory environment for ocean industries.
- **Better Information on MPA Resources, Uses and Recreational Opportunities** - As part of the development of the national system, the MPA Center has developed a comprehensive database on the number, location and types of U.S. MPAs. This information will answer questions from visitors and other users, such as: "Where can I go fishing?" and "What is the purpose of my local MPA?"





How the National System of MPAs Can Work for All of Us...

The National MPA Center is committed to focusing its efforts on projects and activities to strengthen MPAs and MPA programs, ocean and Great Lakes planning and management, and through them, the conservation of our Nation's natural and cultural marine heritage and the ecologically and economically sustainable use of the marine environment for future generations. Coordinated, cooperative work to achieve common conservation objectives is especially critical during these times of limited operating resources at all levels of government and the private sector. Priorities include:

- **Recognition for MPA Programs and Sites** - Recognition helps build public support for MPA programs. The national system will highlight participating MPA programs and sites on its web site, www.mpa.gov -- an internationally recognized resource for MPA information. Participating programs will also receive a Communications Toolkit to assist them in their outreach efforts, and the right to use the national system identity on materials related to participating MPAs.

How the National System of MPAs Can Work for All of Us... (cont'd)

- **Information for Regional Ocean Governance and MPA Planning and Management** - Information about protected areas, other closures, and ocean uses is critical for a wide range of ocean management decisions. The MPA Center has developed several national databases to address this need:
  - MPA Inventory - The only comprehensive national inventory of U.S. MPAs, the MPA Inventory includes information on nearly 1,700 U.S. MPAs, including GIS data for most sites.
  - "De Facto" MPA Inventory - Many areas are restricted for reasons other than conservation, such as military closures, safety zones, hazard areas and anchorages. The MPA Center has developed a national inventory of these federal "de facto" MPAs, which will be available on www.mpa.gov in 2009.
  - Ocean Uses Atlas - The MPA Center is developing a comprehensive atlas of consumptive and non-consumptive ocean uses for California, and is seeking partnerships to expand this work in other states and regions.
  - MPA Virtual Library - Maintained on www.mpa.gov, the MPA Virtual Library provides searchable citations, articles, web sites and conferences on a wide range of MPA management and design issues.

- **Integration with Ocean and Coastal Management Programs** - The national system provides an opportunity to enhance our collective conservation efforts through the integration of MPA programs with other ocean management programs with complementary goals. For example, the MPA Federal Advisory Committee is currently working on recommendations for integrating the national system with the Integrated Ocean Observing System (IOOS). The needs of the national system can help guide the future development of IOOS, and MPAs in the national system can serve as platforms for ocean observations. The MPA Center is also working with NOAA's Office of Coast Survey to include MPAs in navigational pockets for mariners and recreational users, such as Coast Pilot, Pocket Charts, and electronic navigational charts.

- **Facilitation of Regional Assessments and Gap Analyses** - Identifying conservation gaps is a critical step toward achieving the conservation objectives of the national system. These gaps are areas in the ocean and Great Lakes that meet the conservation objectives of the national system but are not adequately protected to ensure their long-term viability. The MPA Center will work collaboratively with partners in each region to complete a gap analysis for U.S. marine ecosystems. These gap analyses can be used by existing federal, state, territorial, tribal and local MPA programs and other ocean and coastal managers to guide future effort to establish new MPAs, strengthen existing ones, or take other protection measures. The gap analysis process will begin on the West Coast (California, Oregon and Washington) in 2009-10.

- **International Linkages to Address Issues of Common Concern** - The national system will help connect regional, state and territorial MPA efforts with relevant international initiatives to address issues of common concern. For example, the North American MPA Network, an initiative of the Commission on Environmental Cooperation (U.S., Canada and Mexico) has focused on the Baja to Bering region, and will begin work in other regions in 2009. Projects include developing common indicators and condition reports from MPAs across the three countries, identification of priority conservation areas, mapping marine ecosystems, training, and technical assistance and exchanges.

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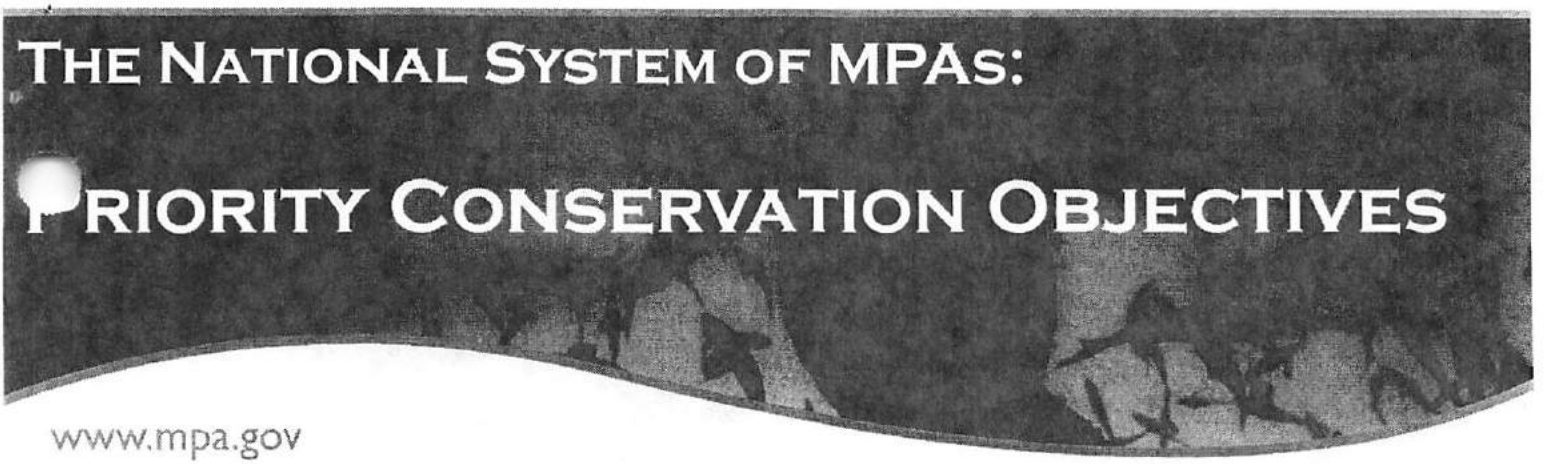
THE NATIONAL SYSTEM OF MPAS:

PRIORITY CONSERVATION OBJECTIVES



www.mpa.gov

The framework for a comprehensive, science-based and effective national system of marine protected areas (MPAs) in U.S. waters was recently released by NOAA and the Department of the Interior. The national system will include eligible existing MPAs across all levels of government, as well as those established in the future by agencies to protect important habitats and resources.

NATIONAL SYSTEM PRIORITY CONSERVATION OBJECTIVES

To ensure the National System of MPAs supports the conservation of our nation's natural and cultural marine heritage and sustainable production marine resources, overarching conservation objectives for the national system were developed.

The conservation objectives were developed and prioritized with input and recommendations of the Marine Protected Areas Federal Advisory Committee (FAC) and other stakeholders. When prioritizing each objective, the following were considered:

1. the availability of existing scientific or other data necessary to acheive the objective
2. the importance of the objective
3. the effort necessary to acheive the objective

Prioritization of these conservation objectives are intended to guide the development of the comprehensive national system, including identification of both existing MPAs to be included, and conservation gaps which might be addressed through the establishment of new MPAs.

Building the national system will begin focused on a subset of the highest priority (near-term) obejctives for each of the national system's three goals:

- **Natural Heritage:** Advance comprehensive conservation and management of the nation's biological communities, habitats, ecosystems, and processes, and the ecological services, uses, and values they provide to present and future generations through ecosystem-based MPA approaches.
- **Cultural Heritage:** Advance comprehensive conservation and management of cultural resources that reflect the nation's maritime history and traditional cultural connections to the sea, as well as the uses and value they provide to present and future generations through ecosystem-based MPA approaches
- **Sustainable Production:** Advance comprehensive conservation and management of the nation's renewable living resources and their habitats (including, but not limited to: spawning, mating, and nursery grounds, and areas established to mimimize incidental bycatch of species) and the social, cultural, and economic values and services they provide to present and future generations through ecosystem-based MPA approaches.

continued on back

NOAA's National Marine Protected Areas (MPA) Center's mission is to facilitate the effective use of science, technology, training, and information in the planning, management, and evaluation of the nation's system of marine protected areas. The MPA Center works in partnership with federal, state, tribal, and local governments and stakeholders to develop a science-based, comprehensive national system of MPAs. These collaborative efforts will lead to a more efficient, effective use of MPAs now and in the future to conserve and sustain the nation's vital marine resources.

NATIONAL Marine Protected Areas CENTER

Office of Ocean and Coastal Resource Management, NOAA Ocean Service, 1305 East West Hwy, (N/ORM) Silver Spring, MD 20910

National System
Priority Conservation Objectives

www.mpa.gov

Natural Heritage objectives

Near Term

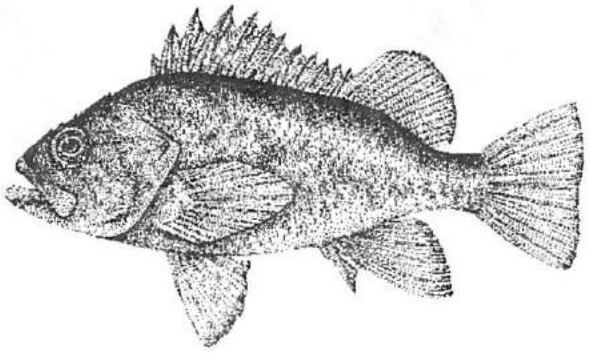
Conserve and manage:

- Key reproduction areas and nursery grounds
- Key biogenic habitats
- Areas of high species and/or high diversity
- Ecologically important geological features and enduring/ recurring oceanographic features
- Critical habitat of threatened and endangered species

Longer Term

Conserve and manage:

- Unique or rare species, habitats and associated communities
- Key areas for migratory species
- Linked areas important to life histories
- Key areas that provide compatible opportunities for education and research



Cultural Heritage Objectives

Near Term

Conserve and manage:

- Key cultural and historic resources listed on the National Register of Historic Places (NRHP)
- Key cultural historic resources determined eligible for the NRHP or listed on a State Register
- Key cultural sites that are paramount

Longer Term

Conserve and manage:

- Key cultural and historic sites that may be threatened
- Key cultural and historic sites that can be utilized for heritage tourism
- Key cultural and historic sites that are under-represented

Sustainable Production Objectives

Near Term

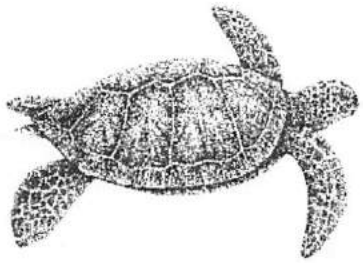
Conserve and manage:

- Key reproduction areas, including larval sources and nursery grounds
- Key areas that sustain or restore high priority fishing grounds

Longer Term

Conserve and manage:

- Key areas for maintaining natural age/sex structure of important harvestable species
- Key foraging grounds
- Key areas that mitigate the impacts of bycatch
- Conserve key areas that provide compatible opportunities for education and research



For more information on the priority conservation objectives, and on the National System of MPAs, visit www.mpa.gov

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Summary bullets of the Marine Protected Area (MPA) Framework process and the National Marine Sanctuaries Act (NMSA) process, and how they might affect the regional fishery management councils (RFMC). Prepared by NPFMC staff.

	MPA Framework	**NMSA**
Status of Action	Final Rule pending. MPA center leader Joe Uravitch will discuss nomination process at December Council meeting. The NPFMC provided comments in 2 letters [4/10/08, and 6/27/08].	NPFMC sent in a comment letter on ANPR for consultation process on 10/31. A 7/30/08 memo to RFMC chairs describes a proposed process that will be put in regulations.
Legal Background	EO 13158 requires that "To the extent permitted by law and to the maximum extent practicable, each Federal agency, in taking such actions [such as authorizing fisheries], shall avoid harm to the natural and cultural resources that are protected by an MPA". The EO also required NOAA to develop a framework for developing a national system of MPAs.	The primary purpose of NMSA is resource protection. Section 304(d) requires consultations between NOAA and federal agencies taking actions "likely to destroy, cause the loss of, or injure a sanctuary resource".
Consultation Process	The NOAA MPA Center identifies initial eligible sites, and invites managing entities (including the council) to nominate MPAs. The Council would be consulted, but NOAA would have the final say in nominations. Then the list goes out to public comment for final nominations.	Staff from the NMSP prepare analyses for ≤120 day response by RFMC to either draft NMSA or MSA regulations (or decline to do anything). See flow charts in 7/30/08 memo.
Council Authority	None. The NOAA MPA Center can add or delete MPA sites regardless of RFMC recommendation. The MPA Center makes final determination.	None. Assistant Administrators of NOS and NMFS will make final determination on regulations.
Notes:	The NPFMC has designated many areas that meet the legal definition of MPAs (Witherell and Woodby 2005). The requirement that the agency must 'avoid harm to resources to the extent practicable' is ripe for challange until such as time as NMFS evaluates the MPAs in the national system to ensure this is true. The framework identifies goals and priority conservation objectives not set forth in EO12158. Without considering other tools, MPAs would need to be everywhere to achieve these objectives. The MPA center will function to assist RFMC by conducting a regional gap analyses to identify priority areas for new or enhanced MPAs. Who requests the 'help'?	There are currently no National Marine Sanctuaries off Alaska. HR 6537, if passed would include a description of the consultation process that was provided in the memo to council chairs and EDs. The bill would also require implementation of new sanctuaries off Alaska by 2030, incorporating a full range of the Nation's marine ecoregions and rare and unique marine habitats. In 2005, the joint RFMC position was that the Sanctuary Act should be amended to authorize councils to prepare fishing regulations within sanctuaries. Sanctuary resources would thus exclude fish resources managed under the MSA.

Presentation to
North Pacific Fisheries Management Council
Joseph A. Uravitch
Director
National Marine Protected Areas Center

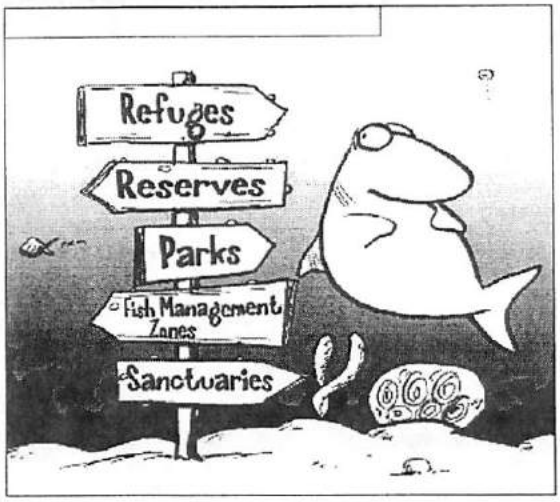
December 2008

Presentation Outline

- Definition of MPAs
- Background on National System
- Nomination Process

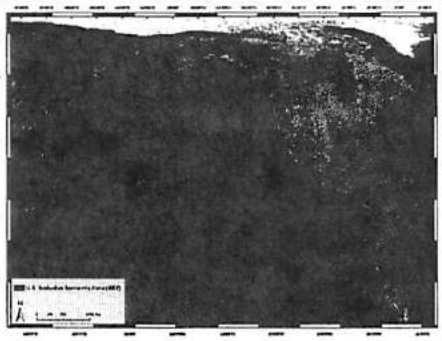
What is an MPA?

Marine Protected Area (MPA) – any area of the marine environment that has been reserved by Federal, state, territorial, tribal or local laws or regulations to provide lasting protection to part or all of the natural and cultural resources therein. (Executive Order 13158 of May 26, 2000)



National Picture of MPAs

- ~ 1,700 MPAs in U.S. waters
- Hundreds of federal, state and local MPA authorities
- About 1/3 of US EEZ in some form of MPA, but purposes narrow
- Majority allow multiple uses (>99% of MPA area)
- Few prohibit all extractive activities (<1% of MPA area); no take MPAs are typically very small
- Federal programs manage most area; states manage most sites



Why A National System of MPAs?

- Confusion over MPA types, purposes, and terms
- About 200 independent legal authorities
- Lack of coordination among MPA designations and operations
- No existing forum for comprehensive planning for place-based management
- Lack of consideration of connectivity among different MPA types
- Missed opportunities to address multiple management objectives in one MPA

The Driving Force: MPA Executive Order 13158

- **Signed by President William J. Clinton in May 2000**
- **Endorsed by President George W. Bush in July 2001**
- **DOC/NOAA and Interior are co-Leads**

- **Develop and implement a scientifically based, comprehensive national system of MPAs representing diverse U.S. marine ecosystems, and the Nation's natural and cultural resources**
- **Improve MPA coordination, stewardship and effectiveness**

Benefits of a National System of MPAs

- To Participating MPAs
  - Enhancing stewardship through regional coordination
  - Building partnerships
  - Building public & international awareness and support
- To the Nation:
  - Protecting representative ecosystems and resources
  - Enhancing connectivity
  - Identifying conservation gaps
- To ocean stakeholders:
  - Transparent process for MPA planning
  - Better planning for diverse ocean uses
  - Better information on MPA resources, uses and fishing opportunities

What will the National System do?

- Establish national goals and objectives
  - natural heritage, cultural heritage and sustainable production
  - 21 Priority Conservation Objectives
- Ensure a comparable set of information about MPAs across the nation
- Provide regional coordination of existing MPAs
  - Identifies common science and stewardship priorities
- Provide tools and technical assistance to enhance stewardship
- Conduct regional gap analyses to identify priority areas for potential new or enhanced MPAs
- No new regulatory authority

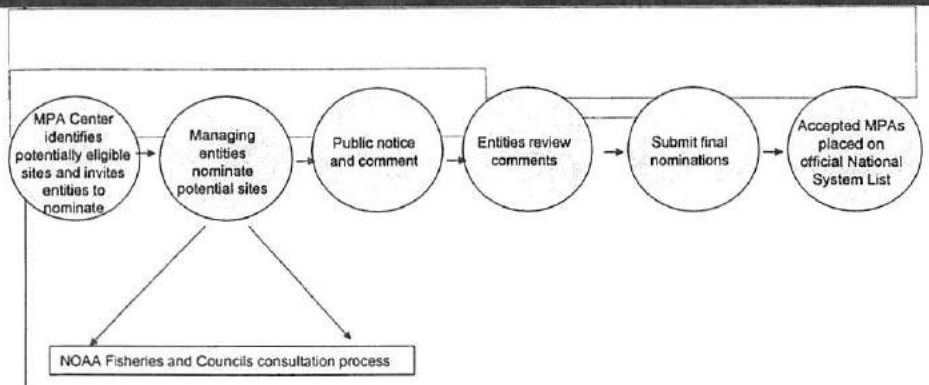
Criteria for Entry to the National System

- Meets the definition of an MPA
  - Key terms: area, marine, reserved, lasting, protection
- Has a management plan
  - Includes site specific information; can be part of a broader fisheries management plan
- Contributes to a priority conservation objective of the nation system
- Additional criteria for cultural resources

Priority Conservation Objectives: Sustainable Production Goal

Goal 3: Advance comprehensive conservation and management of the nation's renewable living resources and their habitats, including, but not limited to, spawning, mating, and nursery grounds, and areas established to minimize incidental by-catch of species, that are important to the nation's social, economic, and cultural well-being through ecosystem-based MPA approaches.	
Priority Conservation Objectives for Goal 3	
Conserve and manage key reproduction areas, including larval sources and nursery grounds	**Near Term**
Conserve key areas that sustain or restore high priority fishing grounds	
Conserve and manage key areas for maintaining natural age/sex structure of important harvestable species	**Mid Term**
Conserve key foraging grounds	
Conserve and manage key areas that mitigate the impacts of bycatch	
Conserve key areas that provide compatible opportunities for education and research	**Long Term**

Nomination Process



Examples of NOAA Fisheries MPAs

North Pacific:
Bering Sea Habitat Conservation Areas = 130,000 nm²
Steller Sea Lion Protection Areas, Gulf of Alaska - Groundfish, Pollock, and Pacific Cod Closures = 83,725 km

New England:
Closed Area I = 3,940.44 km & Closed Area II = 6,734 km
Stellwagen Bank/Jeffreys Ledge Restricted Area = 5,271 km

Pacific:
Klamath River Salmon Conservation Zone = 394.02 km
Big Sur/Port San Luis Bottom Trawl Closed Area = 10,390 km

Mid-Atlantic:
Mid-Atlantic (Elephant Trunk) Closed Area = 5,387 km
Southern Mid-Atlantic Waters Closure Area = 113,534 km

South Atlantic:
Charleston Bump Closed Area = 125,494 km
East Florida Coast Closed Area = 103,448 km

Western Pacific
WestPac Bed = 39.47 km
Hancock Seamount = 61,481 km

Gulf of Mexico:
Tortugas Marine Reserves = 348.86 km
Reef Fish Stressed Area = 99,478 km

Caribbean:
Red Hind Spawning Aggregation Areas = 104.01 km
Mutton Snapper Spawning Aggregation Area = 8.72 km

National System Milestones for FY09

- Initial Nomination Process: Nov 2008 – Jan 2009
  - Aiming for initial membership representing diverse levels of government and types of MPAs
  - NOAA Fisheries Service needs time to consult with Councils, but initial national system group could include MPAs established under MMPA or ESA
- Announcement first National System MPAs: Spring 2009
- Nomination process will continue in 2009 (rolling)
- Annual nomination process cycle in future years
- Opportunity to coordinate with other federal and state MPA sites in the system
- Develop methodology for first regional gap analysis workshop – West Coast (CA, WA, OR)

MPA Federal Advisory Committee

- Diverse, stakeholder committee
- 30 members
  - commercial and recreational fishing
  - industry
  - natural and social science
  - environmental organizations
  - states and tribes

- North Pacific Members
  - Dave Benton, Marine Conservation Alliance (10/09)
  - Alvin Osterback, Port of Dutch Harbor (10/11)
  - Walter Pereyra, Arctic Storm Management Group (10/09)
- Nomination process open now (through Jan 31)

Questions?

A National System of MPAs, collaboratively conserving the nation's…

Natural Heritage,

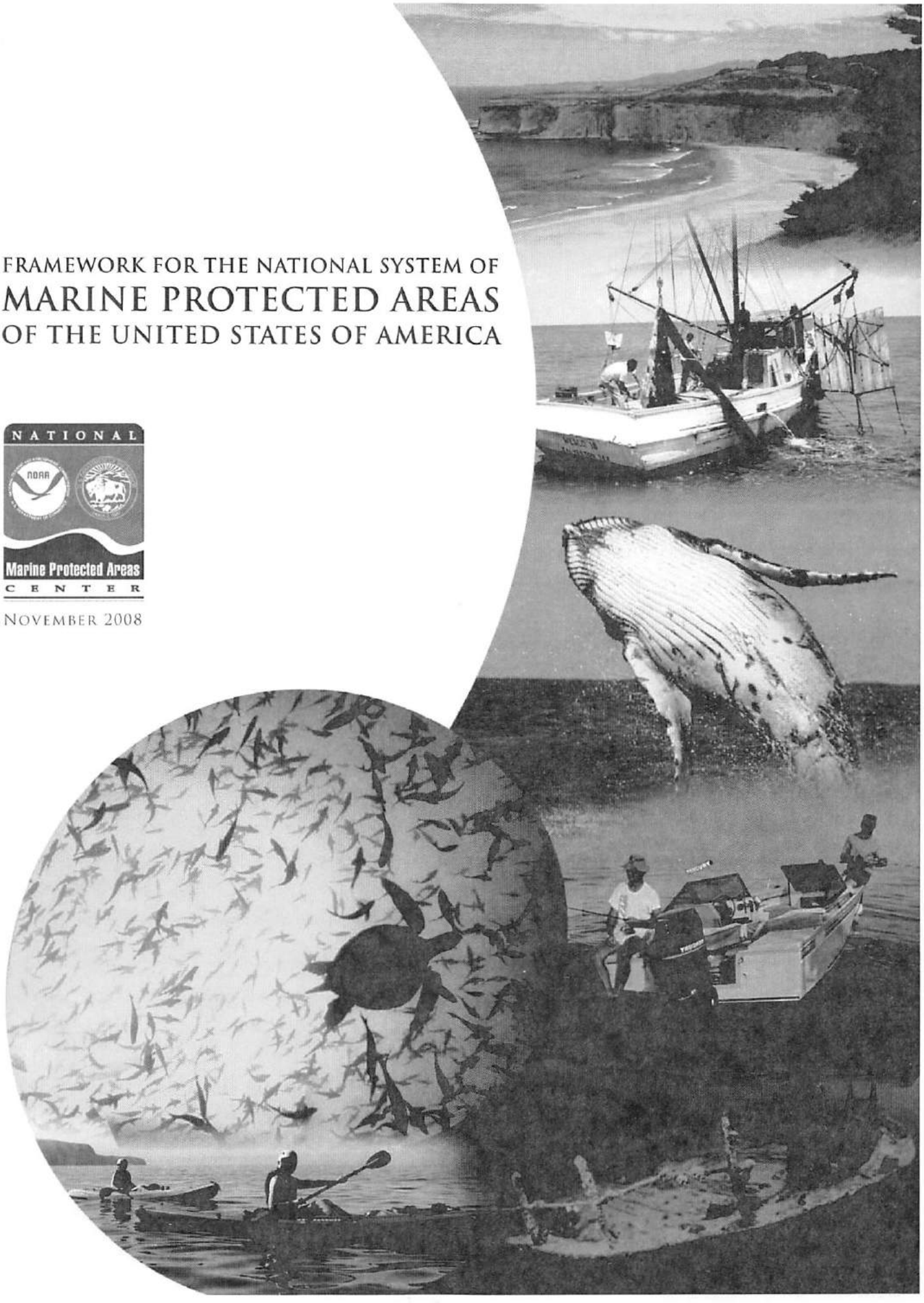
Sustainable Production, and

Cultural Heritage.

FRAMEWORK FOR THE NATIONAL SYSTEM OF MARINE PROTECTED AREAS OF THE UNITED STATES OF AMERICA

NATIONAL
NOAA
Marine Protected Areas
CENTER

NOVEMBER 2008



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November 2008

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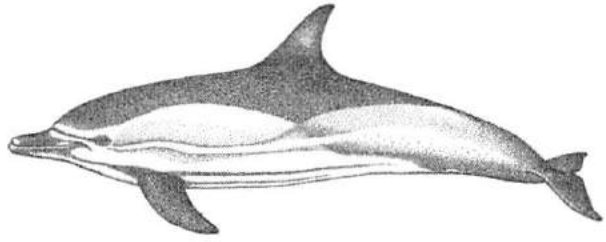
Cover photos courtesy of the National Oceanic and Atmospheric Administration.



FRAMEWORK FOR THE NATIONAL SYSTEM OF MARINE PROTECTED AREAS OF THE UNITED STATES OF AMERICA

CONTENTS

EXECUTIVE SUMMARY

Increasing impacts on the world's oceans from coastal and offshore development, overfishing, a changing climate, natural events, and other sources are straining the health of marine ecosystems and the Great Lakes. Impacts to these intricately balanced environments include declining fish populations, degradation of coral reefs and other vital habitats, threats to rare or endangered species, and loss of artifacts and resources that represent the diverse cultural heritage of the United States. The effects of these losses are significant and jeopardize the social and economic fabric of the nation.

In the United States and around the world, marine protected areas (MPAs) are increasingly recognized as an important and promising management tool for mitigating or buffering some of these impacts. When used effectively and as a part of a broader ecosystem-based approach to management, MPAs can help to restore and maintain healthy marine and Great Lakes environments by contributing to the overall protection of critical marine habitats and resources. In this way, effective MPAs also can offer social and economic opportunities for current and future generations, such

as tourism, biotechnology, fishing, education, and scientific research.

MPAs are designated and managed at all levels of government by a variety of agencies including parks, fisheries, wildlife, natural resource and historic resource departments, among others. U.S. MPAs have been established by well over 100 legal authorities, with some federal and state agencies managing more than one MPA program, each with its own legal purpose. There are approximately 1,700 existing MPAs in the United States that have been established by federal, state, territorial, and local governments to protect and conserve the nation's rich natural and cultural marine heritage and sustainable production resources. These MPAs have been designated to achieve a myriad of conservation objectives, ranging from conservation of biodiversity hotspots, to preservation of sunken historic vessels, to protection of spawning aggregations important to commercial and recreational fisheries. Similarly, the level of protection provided by these MPAs ranges from fully protected or no-take marine reserves to sites allowing multiple uses, including fishing, recreational, and industrial uses.

Recognizing the significant role that U.S. MPAs play in conserving marine heritage and sustainable use, and the lack of a national institution for comprehensive MPA planning, coordination, and support, Presidential Executive Order 13158 of May 26, 2000 (Order), found in Appendix D of this document, calls for the development of a National System of Marine Protected Areas (national system). The Order clearly calls for a national and not a federal system, and requires collaboration not only with other federal agencies, but also with coastal states and territories, tribes, Regional Fishery Management Councils, and other entities, as appropriate, including the MPA Federal Advisory Committee. The Order further specifies that the national system be scientifically based, comprehensive, and represent the nation's diverse marine ecosystems and natural and cultural resources.

To provide a blueprint for building the National System of MPAs,[1] the Order calls for the development of a framework for a National System of MPAs and directs the establishment of a National MPA Center (MPA Center) within the National Oceanic and Atmospheric Administration (NOAA) to lead the system's development and implementation. This final *Framework for the National System of MPAs of the United States of America* (Framework) is the result of a multi-year development effort. The first draft Framework received over 11,000 comment submissions (composed of comments from 100 individual commenters and a petition from nearly 11,000 people) during its September 2006 to February 2007 public comment period. A second draft addressing these comments was published for public comment from March-May 2008, and received 34 public comment submissions. The MPA Federal Advisory Committee also provided two sets of recommendations on the Framework that have contributed significantly to its final form.

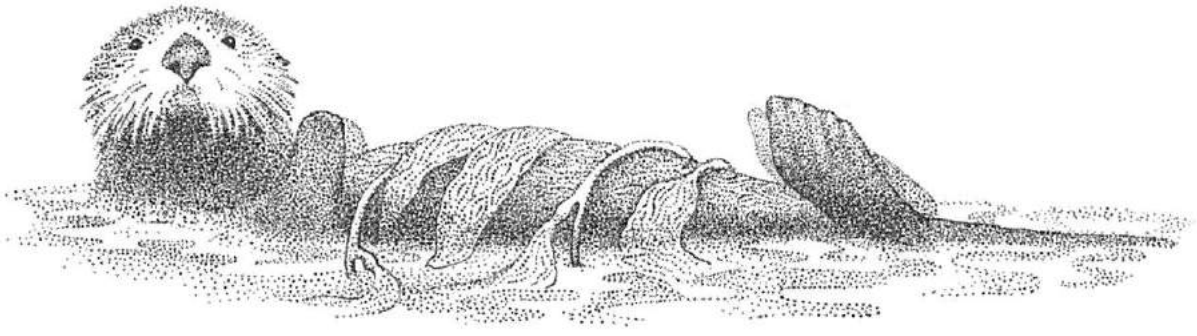
The Framework recognizes that U.S. MPA programs can achieve more efficient, effective conservation of the nation's important natural and cultural resources by working together rather than separately, and that many solutions require collaboration across programs with their own individual mandates, levels of government, and even international boundaries. It proposes a national system that is, initially, an assemblage of existing MPA sites, systems, and networks established and managed by federal, state, territorial, commonwealth, tribal, or local governments, acknowledging and building upon the contributions of these foundation programs. In addition, the Framework outlines collaborative, transparent processes for MPA programs at all levels of government to work together at regional, national, and international levels and with public participation to achieve common conservation objectives through comprehensive MPA planning; identification of enhanced or new MPAs that may be needed; and support for improved MPA science, stewardship, and effectiveness.

[1] The purpose of this document is to provide a framework for developing and implementing a National System of MPAs; it is not a blueprint for the establishment of individual MPAs.

THE FRAMEWORK OUTLINES THE FOLLOWING KEY COMPONENTS OF THE NATIONAL SYSTEM:

- A set of overarching national system goals and priority conservation objectives.
- MPA eligibility criteria and other key definitions.
- A nomination process for existing MPAs to be included in the national system that provides opportunities for public input.
- A science-based, public process for identifying conservation gaps in the national system.
- A process for improving regional and ecosystem-based coordination of MPAs by:
  - creating new or strengthening existing regional forums for MPA coordination;
  - identifying and catalyzing action to address shared priorities for improving MPA science, stewardship, and effectiveness; and
  - developing collaborative, ecosystem-based MPA planning to identify and recommend MPAs for inclusion in the new national system.
- Mechanisms for national and international coordination.
- Implementation guidance regarding federal agency responsibilities to avoid harm to resources protected by the National System of MPAs.
- Mechanisms for monitoring, evaluating, and reporting on national system progress and priorities.

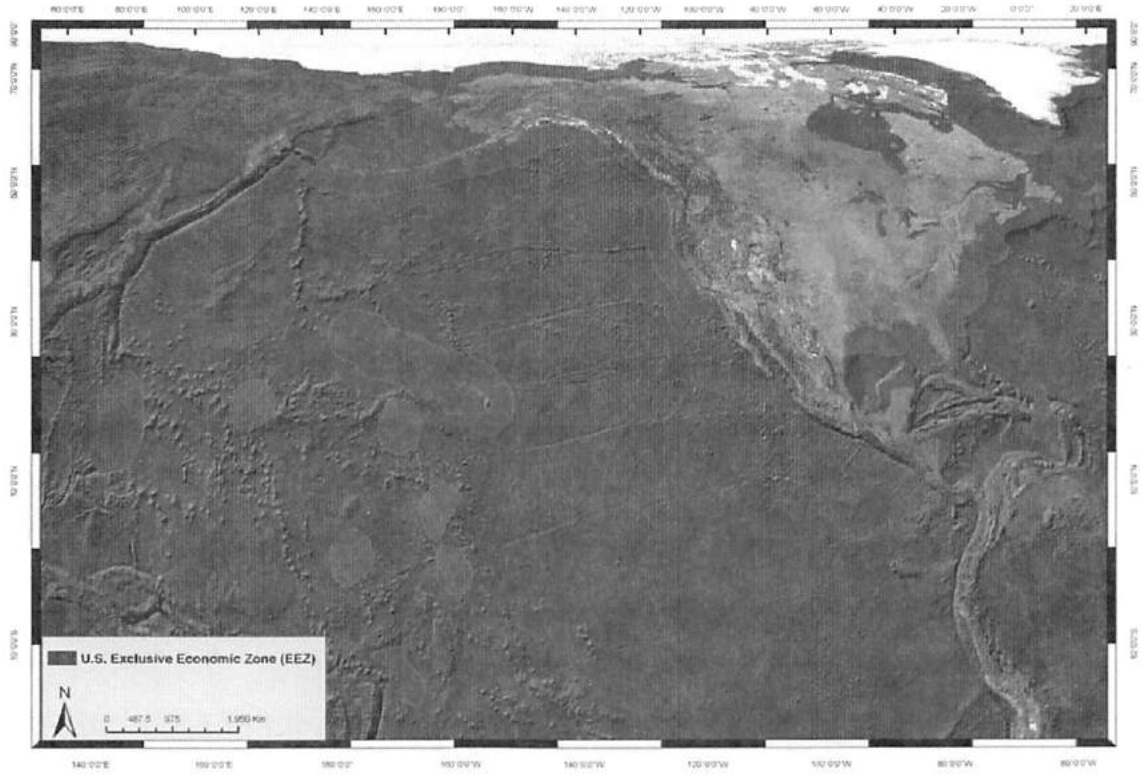
Through collaborative efforts among U.S. MPA programs and stakeholders, the national system can achieve the Order's goal of enhancing the comprehensive conservation of the nation's natural and cultural marine heritage and the ecologically and economically sustainable use of the marine environment for present and future generations.



Marine Protected Area – *Any area of the marine environment that has been reserved by federal, state, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein. (Executive Order 13158)*

National System of MPAs – *The group of MPA sites, networks, and systems established and managed by federal, state, tribal, and/or local governments that collectively enhance conservation of the nation's natural and cultural marine heritage, and represent its diverse ecosystems and resources. National system MPAs work together at the regional and national levels to achieve common objectives for conserving the nation's important natural and cultural resources.*

Figure 1: U.S. Exclusive Economic Zone



II. INTRODUCTION

A. BACKGROUND

With the world's largest Exclusive Economic Zone (Figure 1), the coastal, marine, and Great Lakes waters of the **United States**[2] support an incredible diversity and wealth of life. These waters also play host to untold special places that represent our rich cultural heritage and connections to the sea. In the same way, myriad human uses, livelihoods, and other activities take place in the marine and coastal environment, benefitting from and relying upon the sustained health of our nation's vast natural and cultural heritage.

As human populations grow and use of marine resources increases, so do the pressures and stresses exerted on these intricately balanced ecosystems. Ensuring the long-term health of these ecosystems and the sustained benefits on which humans depend requires comprehensive management approaches. In the United States and many other countries around the

[2] Important terms are in bold the first time they are used and defined in the Glossary found in Section VI of this document.

"Based on evidence from existing marine area closures in both temperate and tropical regions, marine reserves and protected areas will be effective tools for addressing conservation needs as part of integrated coastal and marine area management."

"MPAs, areas designated for special protection to enhance the management of marine resources, show promise as components of an ecosystem-based approach for conserving the ocean's living assets."

"Integration of management across the array of federal and state agencies will be needed to develop a national system of MPAs that effectively and efficiently conserves marine resources and provides equitable representation for the diversity of groups with interests in the sea."

Committee on the Evaluation, Design, and Monitoring of Marine Reserves and Protected Areas in the United States, Ocean Studies Board, Commission on Geosciences, Environment, and Resources, National Research Council, /Marine Protected Areas: Tools for Sustaining Ocean Ecosystems./ Washington, D.C.: National Academy Press, 2001.

world, marine protected areas (MPAs) are increasingly recognized and used as important tools for the conservation and sustainable use of marine resources and as an important component of a comprehensive management approach.

Recognizing the expanding role and importance of MPAs in the United States, Presidential Executive Order 13158 of May 26, 2000 (Order) directs the Department of Commerce (DOC) and the Department of the Interior (DOI), in consultation with other federal agencies,[3] to develop a **National System of Marine Protected Areas** (national system).

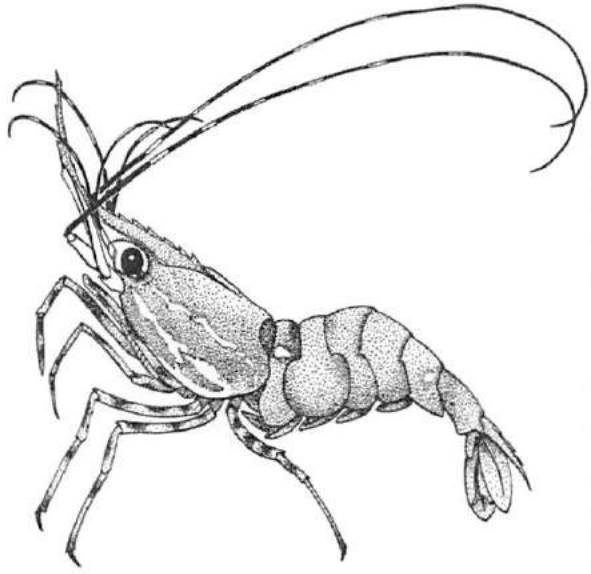
The Order specifies that this is to be a *national* and not a *federal* system and requires consultation with all **states** (this includes U.S. states, territories, and commonwealths as defined in the Glossary, Section VI) that contain portions of the marine and Great Lakes environment; **tribes**; Regional Fishery Management Councils (FMCs); and other entities, as appropriate, including the Marine Protected Areas Federal Advisory Committee (MPA FAC) established by the Department of Commerce under the Order. The Order further specifies that the national system be scientifically based and comprehensive, and that it represent the diverse marine **ecosystems** of the United States and the nation's **natural** and **cultural resources**.

To provide a roadmap for building the national system, the Order calls for the development of a framework for a National System of MPAs and establishes the National MPA Center (MPA Center) within DOC's National Oceanic and Atmospheric Administration (NOAA) to develop the system and coordinate its subsequent implementation. This *Framework for the*

[3] The Department of Defense, the Department of State, the United States Agency for International Development, the Department of Transportation, the Environmental Protection Agency, the Department of Homeland Security, the National Science Foundation, and other pertinent federal agencies.

National System of Marine Protected Areas of the United States of America (Framework) outlines collaborative processes for building this assemblage of existing MPA sites, networks, and systems established and managed by federal, state, tribal, or **local governments** and for collectively working together at the **regional** and national levels to achieve common objectives for conserving the nation's important natural and cultural resources.

For the purposes of the national system, the term "**marine protected area**" (MPA) is defined by the Order as, "Any **area** of the **marine environment** that has been **reserved** by Federal, State, territorial, tribal, or **local** laws or regulations to provide **lasting protection** for part or all of the natural and cultural resources therein." The term MPA, as defined and further clarified and used in this document, is not synonymous with or limited to "no-take reserves" or "marine reserves." The term MPA used here denotes an array of levels of protection and conservation purposes, from areas that allow multiple-use activities to areas that restrict take and/or access. To meet the nation's goals for conserving **natural heritage** and **cultural heritage** and achieving **sustainable production** of resources found in the coastal and marine environments, the national system must include an approach to balancing types and levels of MPA protections that is science-based and **stakeholder** informed. The national system is intended to be inclusive of MPAs across the spectrum of levels of protection, from multiple-use to no-take, recognizing that existing MPAs across this spectrum offer different values to the national system that can help meet its goals and objectives.



While MPAs are an important tool for marine conservation, other types of management approaches are employed to address marine conservation objectives while allowing other appropriate uses and activities in the marine environment to take place in an economically and environmentally sustainable manner. Like other tools, MPAs should be carefully designed and implemented to meet specific conservation goals. Efforts to develop the national system must be both coordinated and integrated within the larger, evolving ecosystem-based approach to managing marine resources.

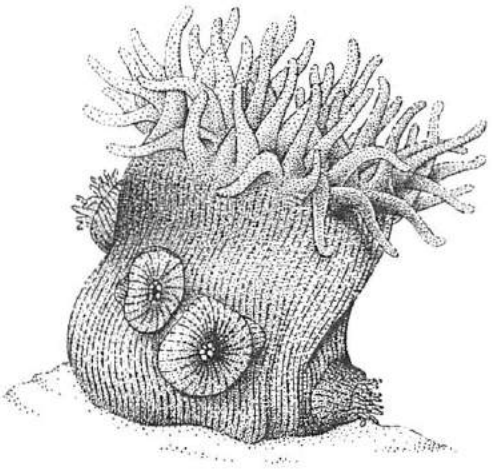
Neither the national system nor the Order establish any new legal authorities to designate, manage, or change MPAs, nor do they alter any existing federal, state, local, or tribal MPA laws or programs. Each MPA or program that participates in the national system will continue to be independently managed by its respective entity or entities, as will any new sites that eventually may be established by those authorities. The national system is intended to support, not interfere with, agencies' independent exercises of their own existing authorities. The national system is therefore envisioned as a "system of sites and systems" that will be developed to achieve conservation and management objectives that could not be accomplished by individual MPAs or MPA programs working independently.

Furthermore, the *requirements* outlined in the Order, which provide the legal authority for establishing the national system, apply only to the actions of federal agencies. The Order does not direct the actions of states or tribes, or alter any existing state, local, or tribal authorities or treaties regarding the establishment or management of MPAs or marine resources under their jurisdiction. Finally, nothing in this document is to be construed as altering existing authorities regarding the establishment of federal

MPAs in areas of the marine environment subject to the jurisdiction and control of states, tribes, or local governments.

While the Order's requirements apply only to federal agencies, the full and ongoing participation of state, tribal, and local governments is critical to an effective national system. MPAs are designated and managed at all levels of government by a variety of agencies including parks, fisheries, wildlife, and natural resource and historic resource departments, among others. U.S. MPAs have been established by over 100 legal authorities, with some federal and state agencies managing more than one MPA program, each with its own legal purpose. Given the importance of the marine resources they manage and their wealth of experience in doing so, building and implementing the national system in partnership with state, tribal, and local governments is a major emphasis of the Framework. A full description of the range of existing U.S. MPA programs, federal MPA initiatives and tribal and international efforts can be found in Appendix B of this document. In light of this breadth of existing U.S. MPA responsibilities, the Order recognizes the need and calls for a national, rather than federal, system of MPAs with a geographic scope that spans the U.S. waters of the Pacific Ocean, including the Bering Sea; Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea; Arctic Ocean; and the Great Lakes.

By establishing an effective structure for working together, the national system will help to increase the efficient protection of important marine resources; contribute to the nation's overall social and economic health; support government agency cooperation and integration; and improve the public's access to scientific information and decision making about the nation's marine resources. It affords all system members the protections of Section 5 of the Executive Order, which requires federal agencies to avoid harm to the natural and cultural resources protected by MPAs within the national system, to the extent permitted by law and to the maximum extent practicable. The collaborative efforts of the national system are also intended to benefit the participating federal, state, tribal, and local government partners through the identification of shared priorities for improving MPA effectiveness and the development of partnerships to provide assistance in meeting those needs. Finally, the national system provides a foundation for cooperation with other countries to conserve resources of common concern.



B. Developing the Framework

In developing this Framework, the MPA Center engaged the nation in a multi-year dialogue to ensure that the national system represents the nation's interests in the conservation and sustainable use of its natural and cultural marine resources. The MPA Center continues to work with and solicit input from federal, state, tribal, and local government partners, FMCs, stakeholder groups, and the general public about their perspectives on the national system.

Recommendations and comments from the MPA FAC, states, tribes, federal agencies, FMC representatives, and non-governmental stakeholders have provided the foundation of viewpoints and information on which this document is constructed. Moreover, many of the core concepts presented in this document stem directly from the recommendation documents and reports submitted by the MPA FAC and states.

The MPA Center led a broad and inclusive public scoping process to develop the initial draft Framework starting in 2005, and conducted general discussions about the purpose of the national system as early as 2001. Specific recommendations during the scoping process were sought and received from the MPA FAC, composed of 30 individual members of the public representing the range of the nation's MPA stakeholders and geographic areas; an MPA State Advisory Group convened by the Coastal States Organization and the MPA Center; and the Federal Interagency MPA Working Group, which provides ongoing, coordinated advice from federal agencies on the implementation of the Order. A full description of the MPA FAC can be found in Appendix B and a list of the MPA FAC members and the Federal Interagency MPA Working Group representatives can be found in Appendix E. The MPA Center also held a series of five regional public dialogue meetings around the country to provide stakeholders with an opportunity to include their input and advice and three regional state workshops to solicit their views. Comments and recommendations received during the scoping process were reviewed and considered in the development of the initial Draft Framework and copies of these and other related materials can be found at http://www.mpa.gov.

The initial Draft Framework was available for public comment between September 2006 and February 2007. The MPA Center received over 11,000 comment submissions comprised of approximately 100 comments from individual commenters and a petition from nearly 11,000 people requesting the development of a nation-wide system of fully protected or "no-take" reserves. In addition, in April and October 2007, the MPA Center solicited and received additional advice and comments from the MPA FAC about options for revising the Framework.

The Revised Draft Framework was made available for public comment from March 15, 2008, through May 16, 2008. The MPA Center received 34 comment submissions during this comment period. During both comment periods, comments were received from state government agencies, industry and conservation organizations, tribal groups, various advisory bodies, and members of the public. In developing this final Framework, the MPA Center considered all comments received during both comment periods as well as the recommendations of the MPA FAC. With the publication of this final Framework, the MPA Center will now initiate implementation of the national system. Plans and guidance documents outlining next steps in the implementation process will be posted at http://www.mpa.gov.

C. Benefits of an Effective National System

The national system offers numerous benefits above and beyond the benefits realized by participating MPA sites and programs individually. These benefits would accrue to the nation as a whole, as well as at regional and local levels. Benefits would extend across the full spectrum of users and stakeholders, including both consumptive and non-consumptive users. The following list reflects some of the potential benefits from the creation and effective management of the national system.[4]

Enhanced Conservation

- **Representativeness** – The national system will significantly boost ongoing efforts to preserve the natural and cultural heritage of the United States by ensuring that the diverse characteristics of the natural and social environment of the nation's seas are conserved for future generations in a systematic way. The representation of all ecosystem or habitat types in all the nation's marine regions, which includes the Great Lakes, within a single system will help ensure that the full complement of biodiversity and valued areas will be protected.

- **Connectivity** – The national system provides an opportunity to identify and establish networks of MPAs that are ecologically

[4] Adapted from MPA FAC, October 2007.

connected. An ecological network of MPAs is a set of discrete MPAs within a region that is functionally connected through dispersal of reproductive stages (eggs, larvae, spores, etc.) or movement of juveniles and adults. Properly designed and located, these networks can enhance linkages between sources and sinks for many marine organisms, which may be essential for some local populations to persist—an increasingly serious challenge in a rapidly changing environment. Planning at the national and regional scales provides an opportunity to address connectivity for many different marine organisms at different spatial scales.

- **Enhanced Stewardship** – The national system can help protect MPAs against the harmful effects of onsite or offsite activities through enhanced regional coordination, public awareness, site management capacity, recognition of these MPAs as important conservation areas, and application of the protective measures in Section 5 of the Executive Order.

Social and Economic Benefits

- **Increased Visitation** – The establishment and recognition of the national system could be an incentive for increased tourism and visitation of some MPAs, as well as an increase in visitation and enjoyment of areas system-wide, providing for uses such as recreational fishing, diving, whale watching, and swimming.

- **Sustained Fisheries** – One goal of the national system is supporting sustainable production of harvested marine resources. Improved regional coordination and support for management, using MPAs where appropriate, could lead to enhanced fishing opportunities for both commercial and recreational fishermen as a result of species recovery, spillover and seeding effects, habitat protection, conservation of old-growth age structure and genetic diversity, establishment of reference sites to examine the regional effects of fishing, and better information on access opportunities.

- **Maintained Coastal Community Identity** – Creation of the national system could help foster social stability by helping to maintain cultural heritage and economic viability.

- **Non-extractive Uses** – Establishment of the national system could create additional system-wide non-consumptive benefits, such as aesthetic, bequest, and spiritual values; opportunities for viewing and photographing marine wildlife; wilderness experiences; scientific research; education; and appreciation of natural resources and the importance of their management.

- **Enhanced Planning for Ocean Uses** – Identification of national system MPAs, as well as identification of areas important for conservation identified through a gap analysis, will help inform regional-scale planning and decision making associated with a wide range of ocean uses. This could also contribute to a more predictable regulatory environment for ocean industry.

Public Awareness, Understanding, and Education

- **Increased Support for Marine Conservation** – The national system recognizes the immense value of our nation's oceans and coasts and could help boost marine conservation by elevating the public profile of MPAs as a management tool. The designation of existing MPAs as part of the national system could enhance the stature of these sites within their managing entities and their local communities, as well as nationally and internationally. This designation also could build support for investment in appropriately established MPAs. Recognition of protected areas in other national or global systems (e.g., the National Estuarine Research Reserve, National Trail, and National Wilderness systems; United Nations Educational, Scientific, and Cultural Organization's World Heritage Sites; Ramsar Wetland sites) has had similar results.

- **More Effective and Efficient Outreach** – The national system will be an important and efficient mechanism for increased public awareness and understanding of the importance of marine resources and conservation efforts. Coordinated outreach efforts will increase the impact of outreach by individual MPAs, and could result in cost savings. Including worthy, but currently little known, sites in the national system could bring increased recognition and visibility to these areas.

- **Promotion of Cultural Heritage** – Participation in the national system elevates and enhances the recognition of and appreciation for the cultural heritage value of MPA sites.

- **Enhanced Educational Opportunities** – The creation of the national system will present enhanced opportunities for natural and cultural heritage education. This could include onsite education and interpretation, as well as classroom and web-based resources. The national system will be a valuable tool for educating students and visitors about the nation's diverse marine and coastal ecosystems and cultural resources.

- **Enhanced Research Opportunities** – The national system will provide scientists and managers more opportunities to understand the dynamics of marine ecosystems and human interactions with them under different management regimes.

Enhanced Coordination and Strategic Direction

- **Shared National System Conservation Objectives** – The national system will focus on specified priority objectives (see Section III (B)). By providing a focus for national and regional conservation efforts, these shared objectives will help build consensus about priority conservation actions, and ultimately increase the effectiveness of the diverse conservation efforts of federal agencies, states, tribes and non-governmental partners.

- **Improved Gap Analysis and Planning** – The formation of the national system will help highlight gaps in protection of important places for which MPAs might be considered to meet priority conservation objectives. This will inform future planning efforts to create MPAs to fill the identified gaps.

- **Enhanced Interagency Cooperation** – The creation of the national system will provide an unprecedented venue and catalyst for increased cooperation among the diverse entities across all levels of government with management authority for the different types of MPAs that comprise the national system. The existence of national system MPAs in the same region is intended to stimulate cooperative efforts in planning, research and monitoring, sharing of equipment and personnel, enforcement efforts, and educational campaigns.

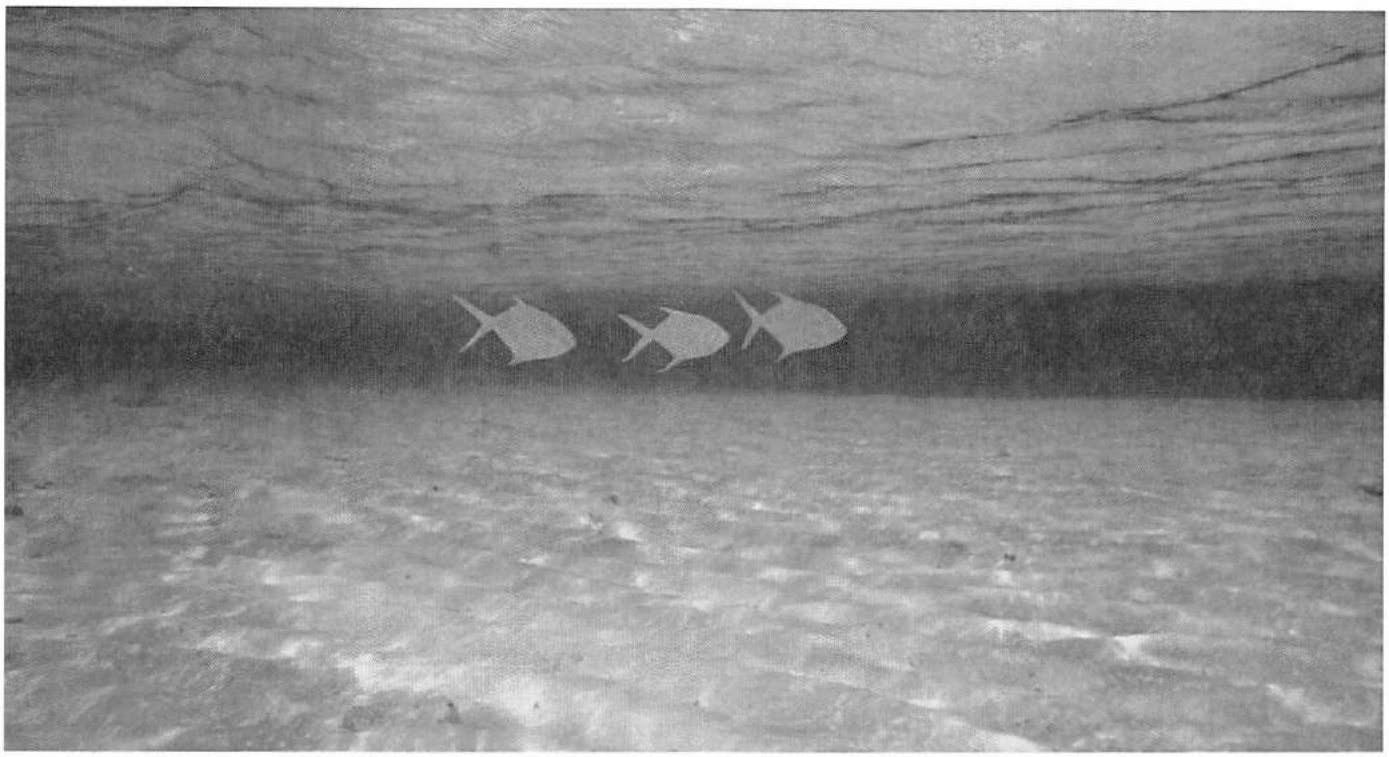
- **Enhanced Regional Coordination** – The establishment or enhancement of regional MPA coordination forums via the national system offers an opportunity for managing entities and stakeholders to look beyond their individual jurisdictions, mandates, and interests, and consider regional and/or ecosystem-based approaches to MPA planning.

- **Enhanced International Coordination** – The national system will facilitate the identification of opportunities to improve linkages with, and provide technical assistance to, international marine protected area programs, to enhance cooperative conservation across international boundaries.

Natural Heritage: *The nation's biological communities, habitats, ecosystems, and processes and the ecological services, uses, and values they provide to present and future generations.*

Cultural Heritage: *The cultural resources that reflect the nation's maritime history and traditional cultural connections to the sea, as well as the uses and values they provide to present and future generations.*

Sustainable Production: *The nation's renewable living resources and their habitats (including, but not limited to, spawning, mating, and nursery grounds, and areas established to minimize incidental bycatch of species) and the social, cultural, and economic values and services they provide to present and future generations.*



III. DEFINING THE NATIONAL SYSTEM OF MPAS

A. National System Purpose

The purpose of the national system is to support the effective stewardship, conservation, restoration, sustainable use, and public understanding and appreciation of the nation's significant natural and cultural marine heritage and sustainable production marine resources, with due consideration of the interests of and implications for all who use, benefit from, and care about our marine environment.

B. National System Goals and Priority Conservation Objectives

The national system's goals and objectives are designed to address the requirements of the Order to develop a comprehensive National System of MPAs representing

diverse United States marine ecosystems and the nation's natural and cultural resources. These goals, which are all of equal importance, have been designed with input and recommendations of the MPA FAC and other stakeholders to meet the purpose of the national system relative to the conservation of the nation's natural heritage, cultural heritage, and sustainable production marine resources (Table 1).

These goals and associated priority conservation objectives are intended to guide the development of the comprehensive national system, including identification of both existing MPAs to be included and conservation gaps which might be addressed through the establishment of MPAs. The national system as a whole will work collectively to achieve these goals and objectives. It is not expected that any individual MPA, MPA program, or system should address all goals or objectives. Measuring progress toward the attainment of these goals is addressed in Section V(C).

Prioritization of Conservation Objectives

Given the magnitude of the task of building a comprehensive national system, the MPA Center will follow a gradual implementation process based on the iterative achievement of the prioritized conservation objectives as outlined in the table below. In this way, building the national system will begin with a focus on a subset of the highest-priority (near-term) objectives for each goal and as completed will move on to the next highest-priority conservation objectives for each goal.

The conservation objectives listed below were prioritized by the MPA FAC and the MPA Center for near-term, mid-term, and long-term implementation based on:

- the availability of existing scientific or other data necessary to achieve the objective;
- the importance of the objective, i.e., its relative urgency and significance as compared to the other objectives; and
- the effort necessary to achieve the objective, in this case the ability to complete the nomination of existing areas and the identification of conservation gaps relative to the objective(s).

Achievement or completion of each conservation objective will include the following activities:

1. identification of existing MPAs that contribute to that objective and nomination of those MPAs by managing entities to the national system, and
2. identification of associated conservation gaps in the national system.

Priority conservation objectives should be considered together and at the regional scale, recognizing that implementation of the priority conservation objectives may not occur simultaneously and that conservation gaps in some areas may be addressed by MPAs, some other management tool, or a combination of tools, as appropriate. Specific processes for each of these activities are described in later sections of this document. Nonetheless, in practical terms, it is unlikely that all objectives within the same timeframe designation (e.g., near-term) will be able to be addressed simultaneously due to varying complexity of implementation and available staffing and funding resources.

To ensure that partners and stakeholders are kept informed of the status of building the national system, the MPA Center will publish, on an as-needed and sequential basis, "priorities announcements" that list the specific subsets of the near-term, mid-term, and long-term national system conservation objectives for each goal as targets for building the national system.

C. National System Design and Implementation Principles

The following principles are intended to guide the decisions and actions of managing entities and stakeholders in building and implementing an effective national system. These principles have been adapted from recommendations of the MPA FAC and the World

Table 1. National System Goals and Priority Conservation Objectives

Goal 1: For Natural Heritage Marine Resources – Advance comprehensive conservation and management of the nation's biological communities, habitats, ecosystems, and processes and the ecological services, uses, and values they provide to present and future generations through ecosystem-based MPA approaches.	
Priority Conservation Objectives for Goal 1 – Conserve and manage:	
Key reproduction areas and nursery grounds	**Near Term**
Key biogenic habitats	
Areas of high species and/or habitat diversity	
Ecologically important geological features and enduring/recurring oceanographic features	
Critical habitat of threatened and endangered species	
Unique or rare species, habitats, and associated communities	**Mid Term**
Key areas for migratory species	
Linked areas important to life histories	**Long Term**
Key areas that provide compatible opportunities for education and research	

Goal 2: For Cultural Heritage Marine Resources – Advance comprehensive conservation and management of cultural resources that reflect the nation's maritime history and traditional cultural connections to the sea, as well as the uses and values they provide to present and future generations through ecosystem-based MPA approaches.	
Priority Conservation Objectives for Goal 2 – Conserve and manage:	
Key cultural and historic resources listed on the National Register of Historic Places (NRHP)	**Near Term**
Key cultural and historic resources determined eligible for the NRHP or listed on a State Register	
Key cultural sites that are paramount to a culture's identity and/or survival	
Key cultural and historic sites that may be threatened	**Mid Term**
Key cultural and historic sites that can be utilized for heritage tourism	
Key cultural and historic sites that are underrepresented	**Long Term**

Goal 3: For Sustainable Production Marine Resources – Advance comprehensive conservation and management of the nation's renewable living resources and their habitats (including, but not limited to, spawning, mating, and nursery grounds and areas established to minimize bycatch of species) and the social, cultural, and economic values and services they provide to present and future generations through ecosystem-based MPA approaches.	
Priority Conservation Objectives for Goal 3 – Conserve and manage:	
Key reproduction areas, including larval sources and nursery grounds	**Near Term**
Key areas that sustain or restore high-priority fishing grounds	
Key areas for maintaining natural age/sex structure of important harvestable species	**Mid Term**
Key foraging grounds	
Key areas that mitigate the impacts of bycatch	
Key areas that provide compatible opportunities for education and research	**Long Term**

Commission on Protected Areas/International Union for Conservation of Nature (WCPA/IUCN) report, "Establishing networks of marine protected areas: A guide for developing national and regional capacity for building MPA networks" (WCPA/IUCN, 2007).

National System Design Principles

Design principles will be used to guide the development of the national system, including the identification of priority conservation gaps in the national system (Section IV (D)) and regional MPA planning (Section V (A) (2)).

- **Prioritized resource conservation targets** – Focus first on conservation objectives that are of highest priority based on significance and urgency, availability of existing scientific and other data, and ability of the managing entity(ies) to act on objectives in the near-term.
- **Representativeness –**
  - *Geographically representative* – represents the range of geographic regions of the nation.
  - *Ecologically representative* – represents the range of marine and coastal biological diversity (from genes to species to habitats to ecosystems) and associated physical environments within the region or nation.
  - *Culturally and/or historically representative* – represents the range of cultural and/or historic resources and values of a particular ecosystem or region or the nation.
  - *Levels of government* – includes areas managed by federal, state, tribal, and local governments and communities.
- **Replication** – Includes multiple sites to ensure continued representation in the face of harmful impacts.
- **Precautionary design** – Decisions are based on the best information currently available from natural science, social science, customary and local knowledge, and other sources. Where information is limited, decisions should reflect a precautionary approach.
- **Resilience** – Designed to maintain ecosystems' natural states and to absorb shocks, particularly in the face of large-scale and long-term changes (such as climate change).
- **Viability** – Inclusion of self-sustaining, geographically dispersed component sites of sufficient extent to ensure population persistence through natural cycles of variation.
- **Connectivity** – Maximize and enhance the linkages among individual MPAs, groups of MPAs within a given eco-region, or MPA networks in the same and/or different regions.

National System Planning and Implementation Principles

Planning and implementation principles that will guide national system efforts are discussed further under Section V, "Implementing the National System," including regional coordination and MPA planning.

- **Cooperation and coordination** – Fosters cooperation and coordination among federal, state, tribal, local, and other management entities to reduce administrative costs, promote efficiency, and effectively utilize existing management infrastructure.
- **National scope, ecosystem and regional scale** – Embraces regional and ecosystem approaches to planning, participation, and implementation. Provides a mechanism for coordinating across regions, nationally, and where appropriate, internationally.
- **Adaptive management** – Employs a systematic process for continually improving national system management policies and practices by learning from the outcomes of operational programs.

- **Monitoring and assessment** – Promotes sound monitoring and evaluation at the site and system levels to assess management effectiveness, relying on established evaluation processes and methodologies, where possible.

- **Compliance and enforcement** – Promotes effective compliance with and enforcement of MPA regulations through design recommendations for MPAs and networks, capacity building, public education, and other mechanisms.

- **Balanced stakeholder involvement** – Provides meaningful opportunities for input from and participation by the nation's MPA stakeholders, including the general public.

- **Active outreach and education** – Raises awareness and understanding of MPAs and stewardship of marine resources.

- **On-site and off-site influences and impacts** – Recognizes and seeks appropriate mechanisms to address both on-site and off-site influences, including impacts to coastal and marine resources from land-based activities.

- **Respecting local and indigenous values** – Considers and addresses local values, including those of indigenous cultures.

- **Appropriate access and compatible uses** – Provides opportunities for appropriate access to and/or compatible use of marine resources consistent with conservation goals and objectives.

D. MPA Eligibility Criteria

To be eligible for nomination to the national system, existing MPAs must meet three (four for cultural sites) criteria, shown in Figure 2 and described in more detail below:

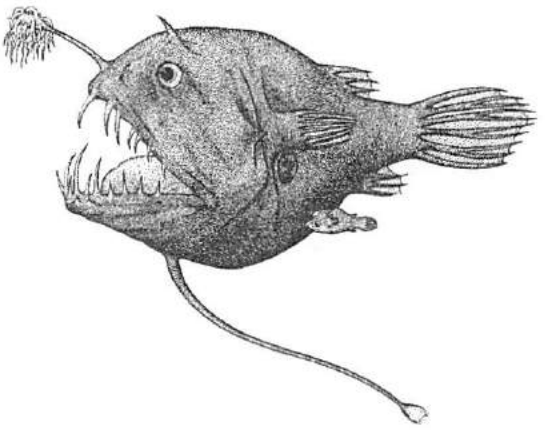
1. Meet the definitional criteria of an MPA, including each of its key terms (see definitions in Table 2) – area, marine environment, reserved, lasting, and protection.

2. Have a management plan.

3. Support at least one priority goal and conservation objective of the national system.

4. Cultural heritage MPAs also must conform to criteria for including sites on the National Register of Historic Places.

Additional sites not currently meeting the management plan criterion can be evaluated for eligibility to be nominated to the system on a case-by-case basis based on their ability to fill gaps in national system coverage of the priority conservation objectives and design principles described in Sections III (B) and (C), respectively. To the extent practicable, the MPA Center intends to assist otherwise qualified sites that do not meet the management plan criterion to develop or strengthen their management plans.

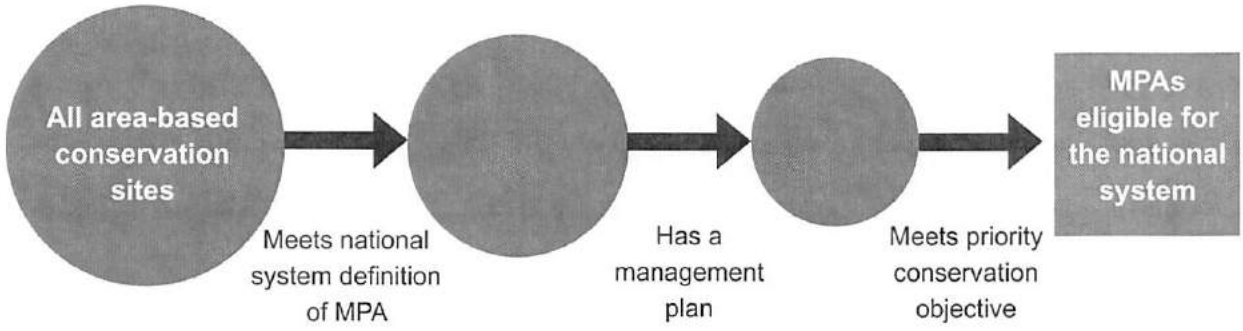


(i) Definition of MPA and its Key Terms

With the goal of standardizing the term "marine protected area" for the purposes of the national system, the Order defines an "MPA" as "[a]ny **area** of the **marine environment** that has been **reserved** by Federal, State, territorial, tribal or local laws or regulations to provide **lasting protection** for part or all of the natural and cultural resources therein."

Without further clarification, the key terms of "area," "marine environment," "reserved," "lasting," and "protection" found in the MPA definition are subject to a range of interpretations and lead to an uncertain scope for the national system. The

Figure 2: Eligibility Criteria for the National System



definitions of key terms for "MPA" listed in Table 2 were guided by recommendations from stakeholders, including the MPA FAC, the analysis of existing place-based conservation efforts, and *Federal Register* comment processes for the Draft and Revised Draft Frameworks.

(ii) Management Plan Criteria

To be eligible for nomination to the national system, an MPA must have a management plan that:

Has been developed at one of the following scales:

- a site-specific MPA management plan,
- part of a larger MPA programmatic management plan,
- component of a broader, non-MPA programmatic management plan (e.g., fishery management plan or species recovery plan), or
- a verbal or written community agreement.[5]

Includes both of the following components:

- specified conservation goals, and
- a process or requirement for monitoring and evaluation of goals.

(iii) Priority Goals and Objectives of the National System

An MPA's conservation purpose must specifically contribute to at least one of the priority goals and objectives published by the MPA Center as current conservation priorities, as described in Section III (B) above.

(iv) National Register of Historic Places Criteria

Cultural resources in the national system of MPAs can include submerged archeological resources, cultural landscapes, and structures as well as ethnographic resources with tribal or traditional cultural meaning, value, and use. Given the cultural resource management community's widespread acknowledgement of the standards developed by the National Park Service for inclusion of a cultural resource in the National Register of Historical Places (NRHP), the national system will integrate core elements of those standards into its criteria for MPAs with cultural marine resources. As such, the cultural marine resources within those MPAs must be historic and defined as at least 50 years of age, unless otherwise determined to be unique to the nation's maritime history or traditional connections to the sea as defined by the NRHP. In addition, the resources must meet the following NRHP evaluation criteria:

[5] Given the unique nature of community agreements, whether verbal or written, the requirement for these management agreements to include conservation goals and monitoring and evaluation components may be met through traditional or science-based approaches. In some Pacific Island cultures, for example, management agreements may be part of local oral tradition, and are not written, but would still be considered as meeting this criterion.

Table 2. Definition of Key Terms for the Purposes of the National System

Key Term	Definition
Area	Must have legally defined geographical boundaries, and may be of any size, except that the site must be a subset of the United States federal, state, local, or tribal marine environment in which it is located. Application of this criterion would exclude, for example, generic broad-based resource management authorities without specific locations and areas whose boundaries change over time based on species presence. The area must be one over which the United States has jurisdiction, consistent with international law.
Marine environment	Must be: (a) ocean or coastal waters (note: coastal waters may include intertidal areas, bays or estuaries); (b) an area of the Great Lakes or their connecting waters; (c) an area of submerged lands under ocean or coastal waters or the Great Lakes or their connecting waters; or (d) a combination of the above. The term "intertidal" is understood to mean the shore zone between the mean low water and mean high water marks. An MPA may be a marine component part of a larger site that includes uplands; however, the terrestrial portion is not considered an MPA. For mapping purposes, an MPA may show an associated terrestrial protected area. For purposes of the national system, NOAA and DOI intend to use the following definition for the term "estuary": "part of a river or stream or other body of water having unimpaired connection with the open sea, where the sea water is measurably diluted with fresh water derived from land drainage, and extending upstream to where ocean-derived salts measure less than 0.5 parts per thousand during the period of average annual low flow." Application of this criterion would exclude, for example, strictly freshwater sites outside the Great Lakes region that contain marine species at certain seasons or life history stages unless that site is a component of a larger, multi-unit MPA. Upon request, the agencies will work with individual federal, state, and tribal MPAs and programs to examine unique conditions that may affect applicability of the term "estuary" or "coastal waters" for sites that have national or regional significance or representativeness. Estuarine-like sites on tributaries of the Great Lakes will be considered for inclusion if they are located within the eight-digit U.S. Geological Survey cataloging unit adjacent to a Great Lake or its connecting waters.
Reserved	Must be established by and currently subject to federal, state, local, or tribal law or regulation. Application of this criterion would exclude, for example, privately created or maintained marine sites.

Lasting	For natural heritage and cultural heritage MPAs, the site's authority must clearly state its intent to provide permanent protection. This definition recognizes that subsequent to establishment, MPA designation and level of protection may change for various reasons, including natural disasters that may destroy or alter resources or changes in societal values. Should any of these changes occur, the status of the MPA relative to the national system could be re-evaluated. Sites and/or protections that must have a specific legislative or other administrative action to be decommissioned shall be considered to have been established with the intent to provide permanent protection. This would include, for example, sites that have a requirement for periodic renewal contingent on evaluation of effectiveness, with no specified expiration date. For sustainable production MPAs, the site must be established with the intent at the time of designation to provide, at a minimum, the duration of protection necessary to achieve the mandated long-term sustainable production objectives for which the site was established. For all MPAs, the site must provide the same level and type of protection at a fixed location and fixed and regular period of any duration during a year.
Protection	Must have existing laws or regulations that are designed and applied to afford the site with increased protection for part or all of the natural and submerged cultural resources therein for the purpose of maintaining or enhancing the lasting conservation of these resources, beyond any general protections that apply outside the site. Application of this criterion would exclude restricted areas that are established for purposes other than conservation. The term would not include, for example, areas closed for navigational safety, areas closed to safeguard modern human-made structures (e.g., submarine cable no-anchor zones), polluted shellfish-bed closure areas, areas closed to avoid fishing gear conflicts, and areas subject to area-based regulations that are established solely to limit fisheries by quota management or to facilitate enforcement.

"The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

a. That are associated with events that have made a significant contribution to the broad patterns of our history; or

b. That are associated with the lives of significant persons in our past; or

c. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

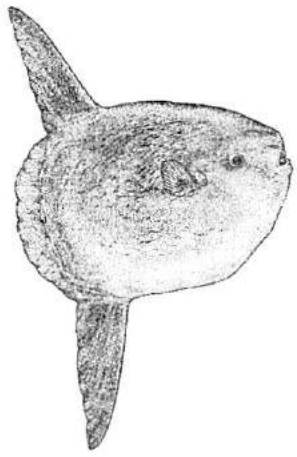
d. That have yielded or may be likely to yield, information important in history or prehistory."

E. MPA Categories

The set of national system MPA categories listed below in Table 3 are intended to provide a limited set of user-friendly terms for communicating generally about the purpose of and level of protection for MPAs that become a part of the national system.[6] In addition, these categories will be useful for:

- partitioning the national system into manageably sized groups of comparable sites to ease identification of shared technical or other assistance;
- grouping sites based on comparable conservation objectives and levels of protection to facilitate identification of gaps in conservation; and
- providing a logical framework for organizing and monitoring how sites added to the national system contribute to the system's conservation objectives.

The MPA Center will work with the respective managing entities to determine the most appropriate category for the MPAs as they become a part of the national system. This categorization will not in any way supersede the designated name or title of the MPA, as established by law or other independent authorities.



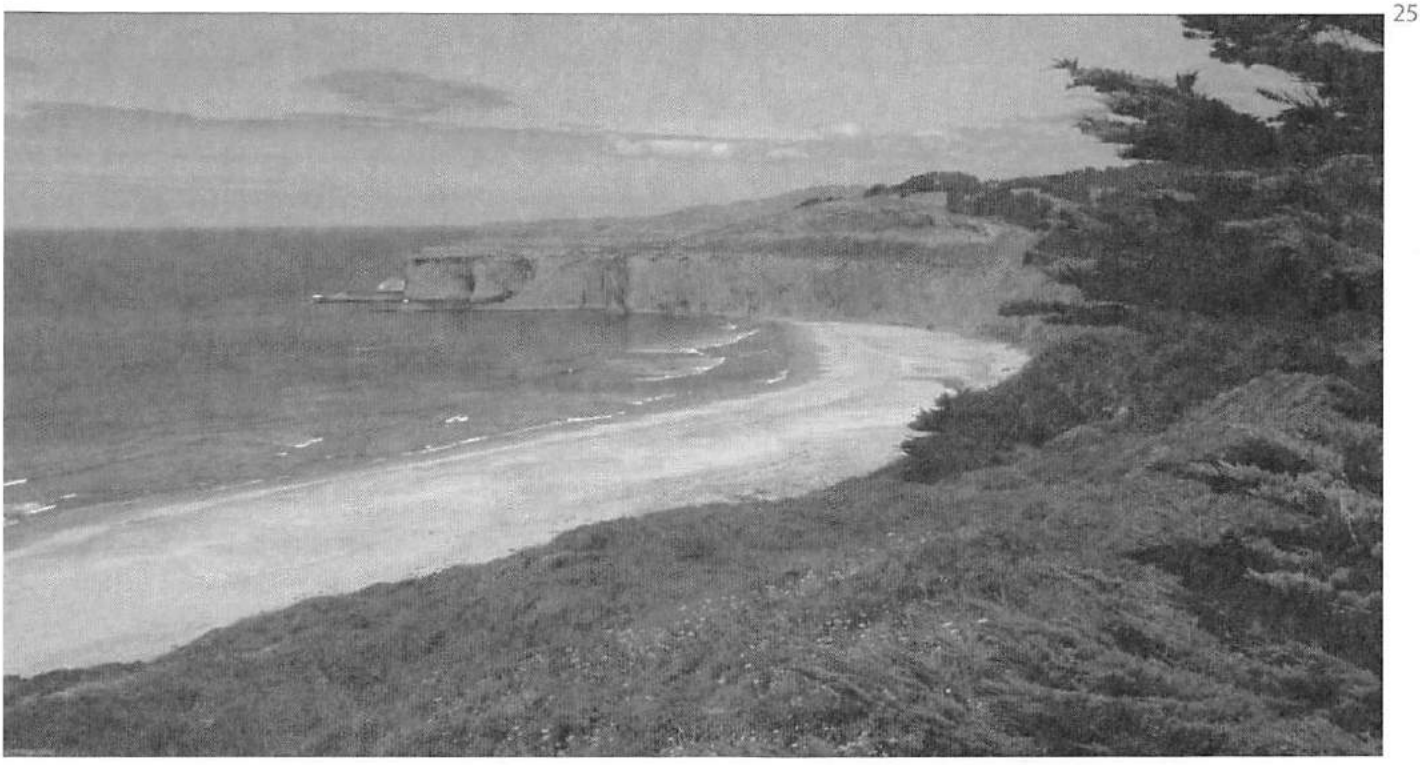
[6] A more detailed categorization scheme useful for more in-depth analysis is provided at http://www.mpa.gov.

Table 3. National System MPA Categories

National System Purpose	MPA Category	Protection and Use Sub-category*	Management Goal(s)
Conserve Marine Heritage	Marine Natural Heritage Areas	Natural Heritage Conservation Areas	Conserve and manage the nation's biological communities, habitats, ecosystems, and processes and the ecological services, uses, and values they provide to present and future generations through ecosystem-based MPA approaches.
		Natural Heritage Reserve Areas	Strongly protect the nation's biological communities, habitats, ecosystems, and processes and the ecological services, uses, and values they provide to present and future generations through ecosystem-based MPA approaches.
	Marine Cultural Heritage Areas	Cultural Heritage Conservation Areas	Conserve and manage cultural resources that reflect the nation's maritime history and traditional cultural connections to the sea and the uses and values they provide to present and future generations through ecosystem-based MPA approaches.
		Cultural Heritage Reserve Areas	Strongly protect cultural resources that reflect the nation's maritime history and traditional cultural connections to the sea and the uses and values they provide to present and future generations through ecosystem-based MPA approaches.
	Marine Natural and Cultural Heritage Areas	Natural and Cultural Heritage Conservation Areas	Management goals of marine natural heritage conservation areas and of marine cultural heritage conservation areas.
		Natural and Cultural Heritage Reserve Areas	Management goals of marine natural heritage reserve areas and of marine cultural reserve areas.
Sustain Marine Production	Marine Sustainable Production Areas	Sustainable Production Conservation Areas	Advance comprehensive conservation and management of the nation's renewable living resources and their habitats (including, but not limited to, spawning, mating, and nursery grounds and areas established to minimize bycatch of species) and the social, cultural, and economic values and services they provide to present and future generations through ecosystem-based MPA approaches.
		Sustainable Production Reserve Areas	Strongly protect the nation's renewable living resources and their habitats (including, but not limited to, spawning, mating, and nursery grounds and areas established to minimize bycatch of species) and the social, cultural, and economic values and services they provide to present and future generations through ecosystem-based MPA approaches.

***Conservation Areas:** Multiple uses allowed; however, uses and activities may be restricted or zoned, and access limited, as necessary to meet site management goals.

***Reserve Areas:** No extractive uses allowed, except permitted scientific and educational uses; destructive or disruptive activities limited; other uses and activities may be restricted or zoned, and access limited, as necessary to meet site management goals.



IV. BUILDING THE NATIONAL SYSTEM OF MPAS

A. Summary and Sequence

Building the national system will involve two major sets of activities:

1. the identification, nomination, and inclusion of existing MPAs in the national system and on the official List of National System MPAs, and

2. the identification of national system conservation gaps in protection of important marine areas that meet the national system's conservation objectives and design criteria, outlined in Sections III (B) and (D) above, with facilitation of subsequent development by the relevant establishing agencies of new MPAs and/or enhancement of existing MPAs to fill those gaps, where appropriate, outlined in Section IV (D) below.

Given the magnitude of the task of developing the national system, the MPA Center will follow an iterative process to build the system gradually over time. The pace of this process will be determined by the availability of resources to carry out the process. The sequence of the iterative process for the above two major sets of national system building activities is as follows, and shown in Figure 3 (a more thorough description of each activity can be found in subsequent subsections):

- As described in Section III (B), the MPA Center will periodically identify near-term priority conservation objectives to guide the phased development of the national system.
- As described in Section IV (B), the MPA Center will lead a nation-wide nomination process for eligible existing MPAs that contribute to the targeted conservation objectives, and include those MPAs in the national system that are successfully nominated and accepted.
- As described in Section IV (D), the MPA Center will lead a collaborative region-by-region process to identify conservation gaps relative to the targeted conservation objectives and national system design criteria. Conservation gaps will be used to inform the development of recommendations for new MPAs through regional MPA planning described in Section V (A), and can also be used by managing entities and stakeholders to guide their efforts to establish new MPAs. It is expected that any management actions taken to fill these gaps will consider different management alternatives and the impacts of those alternatives on human uses of the areas.
- Upon completion of the nation-wide nomination process and region-by-region conservation gap identification for the targeted conservation objectives, or at such other time that resources and capabilities allow, the MPA Center will publish the next iterative set of conservation objectives to serve as targets for building the national system.

B. Nomination Process for Existing MPAs

The process for nominating and including eligible MPAs in the national system is as follows. Nominations of existing MPAs originate with the managing entity(ies), with the MPA Center providing background information and analysis (see Figure 4 for summary):

1. The MPA Center will review sites in the United States Marine Protected Areas Inventory and identify the set of sites that meet the three (or four, for cultural sites) MPA eligibility criteria outlined in Section III (D). Information on whether sites meet criterion 3, supporting at least one priority goal and conservation objective of the national system, will be provided by the managing entity. The MPA Inventory (see http://www.mpa.gov) is a refinement of the earlier Marine Managed Areas Inventory, which was a broader collection of place-based management areas in U.S. waters.
2. The MPA Center will send the managing entity or entities[7] for those sites found to be potentially eligible a letter of invitation to nominate the site, including the rationale for eligibility.

[7] In most cases, management authority for an MPA lies with one agency or program; however, in certain instances, such as the federal/state National Estuarine Research Reserve System and state/tribe co-management arrangements, authority is formally shared or split among two or more entities. Similarly, Regional Fishery Management Councils have a unique role with the National Marine Fisheries Service in the process for establishing federal fishery management zones and federal fisheries habitat conservation zones. Where explicit agreements and/or legislation govern shared management authority or other formal relationships, the multiple managing entities will be consulted throughout the nomination process. Regional Fishery Management Councils will be a key partner with NOAA in nominating sites to the national system. Through a transparent process, NOAA will consult with its Council partners and fully consider the views and interests of the Councils prior to nominating a site to the national system. These NOAA-Council consultations would take place at the regional-level at key stages of the nominating process, and DOC/NOAA would make final decisions on nominations.

Figure 3: Building the National System of MPAs

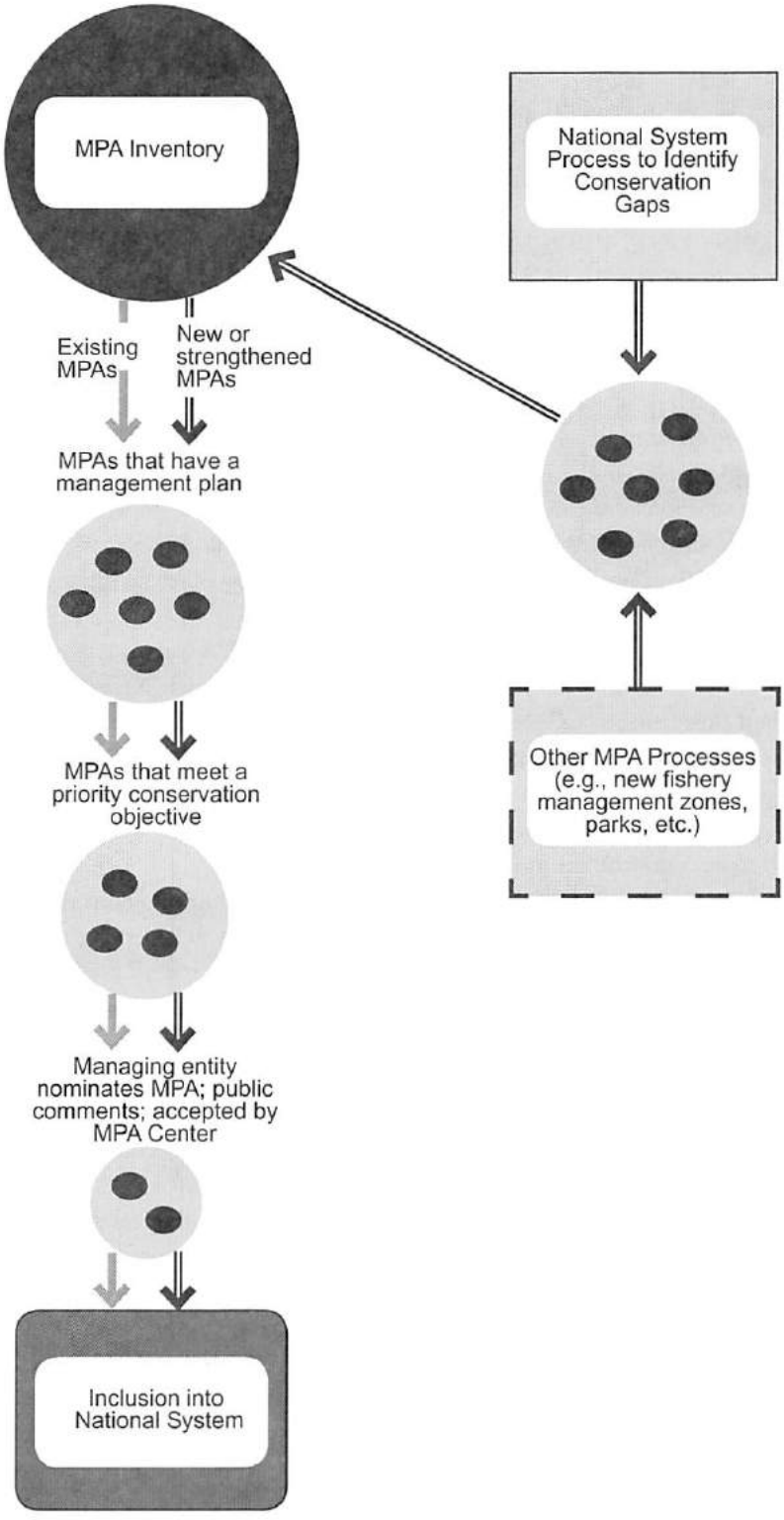
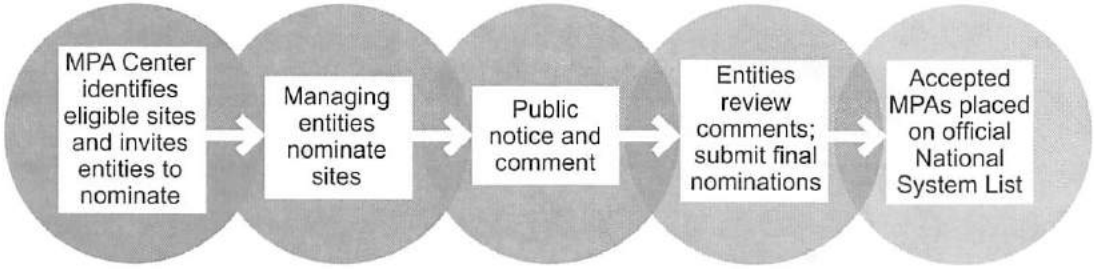


Figure 4: Summary of Nomination Process



3. The managing entity or entities will be asked to consider and nominate some or all of the identified sites for inclusion in the national system, including additional information required to evaluate site eligibility relative to meeting priority conservation objectives.

   The managing entity or entities may also provide a brief justification and nomination for: a) unsolicited sites believed to meet the requirements for entry into the national system, or b) other sites that do not appear to currently meet the management plan eligibility criterion but are deemed to be a priority for inclusion based on their ability to fill gaps in national system coverage of the priority conservation objectives and design principles.

4. The MPA Center will review the set of nominated sites to ensure that nominations are sufficiently justified.

5. The MPA Center will notify the public, via the *Federal Register* and other means, of the set of sites nominated for inclusion in the national system and provide the opportunity to comment on the eligibility of nominated sites (or sites that have not been nominated) relative to the eligibility criteria and any additional justification. The MPA Center will work with the managing entities to ensure adequate public involvement, including public meetings, as appropriate.

6. The MPA Center will receive, evaluate, and forward public comment to the relevant managing entity or entities, which will reaffirm or withdraw (in writing to the MPA Center) the nomination based on public comment received and any other factors deemed relevant.

7. The MPA Center will review the final determination for each nomination, consult as necessary with the managing entity or entities should there be any discrepancies, and accept mutually agreed upon MPAs into the national system.

8. MPAs that are accepted into the national system will be listed in the official List of National System MPAs (see below) comprising the national system and made available to the public via the *Federal Register*, the website http://www.mpa.gov, and other means.

Where non-governmental stakeholders, including the general public, may have an interest in the nomination of certain MPAs, they are encouraged to contact the respective managing entity or entities to share their perspectives about nomination in addition to participating in the public comment process described in number 5 in this section. Similarly, where government agencies have an interest in the nomination of eligible MPAs for which they do not have management authority, they are encouraged to consult with the respective managing entity or entities.

C. The Official List of National System MPAs

1. Adding MPAs to the List and National System

Pursuant to Section 4(d) of the Order, and to ensure that managing entities, organizations, and the general public are aware of the MPAs that make up the national system, the MPA Center will maintain a List of National System MPAs. The List of National System MPAs will be the official inventory of all MPAs that have been formally included in and recognized as part of the National System of MPAs under Section IV (B), above. In addition, MPAs on the List of National System MPAs are those sites that are the subject of Section 5 of the Order, "Agency Responsibilities," as described in Section V (D) of this document. This authority does not apply to MPAs not on the List of National System MPAs.

The List will include the following information for each national system MPA:

a. name,

b. location,

c. national system MPA category,

d. priority conservation objective(s) contributed to,

e. boundaries,

f. key resources protected,

g. authorizing legislation,

h. levels and types of protection,

i. managing authority or program,

j. name of point of contact, and

k. relevant contact information.

The MPA Center will regularly publish an updated, summary version of the List of National System MPAs in the *Federal Register*, and will make it available to the public at http://www.mpa.gov or by request.

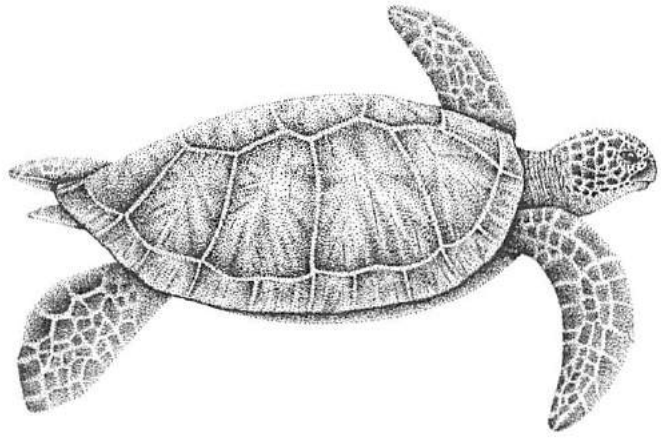
2. Modifying MPAs on the List and in the National System

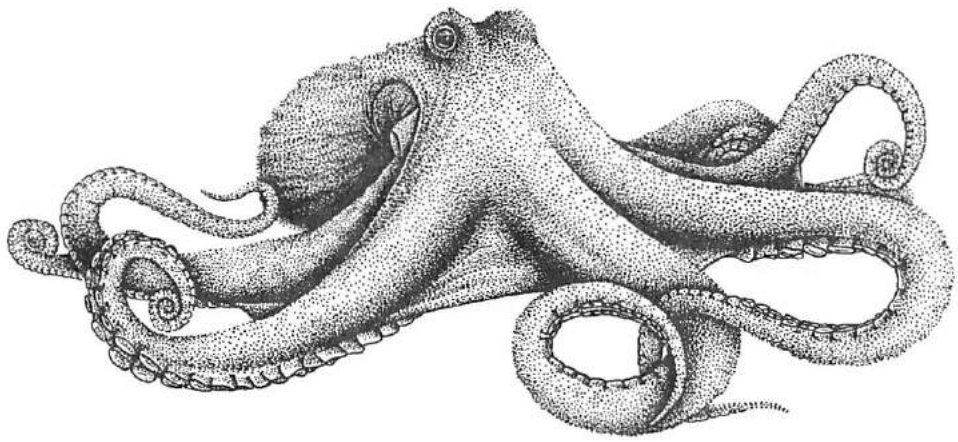
Participation in the national system does not constrain the management entity from changing its management of the MPA. The management entity would still have the ability, within its own authorities and required processes, to add or reduce levels of protection, change the size of the MPA, or make other changes. Management entities would be asked to provide all significant updates to the MPA Center, but would not be required to re-nominate the site. If the MPA no longer meets the national system MPA eligibility criteria, it would be removed from the system (see Section IV (C) 3).

3. Removing MPAs from the List and National System

MPA sites or systems that have been included on the List of National System MPAs may be removed at any time by written request of the managing entity(ies) or the MPA Center for reasons including:

- the MPA ceases to exist (e.g., the legal authority or regulations expire);





- the MPA no longer meets the national system MPA eligibility criteria; or
- the managing authority requests removal.

All requests from managing entities or actions by the MPA Center to remove an MPA from the national system must be made in writing, will become part of the public record, and will be published at http://www.mpa.gov and in the *Federal Register* for comment. Upon receipt by the MPA Center of a request to remove an MPA from the national system, the managing entity(ies) and the MPA Center will enter into a dialogue on the proposal. Any comments received from the public relating to the removal of an MPA from the national system will be forwarded to the managing entity(ies) for its consideration in making its final determination to have the site removed from the national system. Upon completion of all obligations by the respective managing entity(ies), the MPA will be removed from the List of National System MPAs and all information referencing the site will be removed from national system materials and archived in the national system information on the website.

D. Identifying National System Conservation Gaps

The nation's suite of existing MPAs contributes significantly to the building of a comprehensive and representative national system. The critical next step toward achieving the national system's conservation objectives is the identification of conservation gaps: areas in the ocean and Great Lakes that meet priority conservation objectives of the national system but that are currently not adequately protected to ensure their long-term viability, as called for in Section 4 (a) of the Order. Conservation gaps identified herein can be used by existing federal, state, tribal, and local MPA managing entities and others to guide their future efforts to establish new or strengthen existing MPAs using their independent authorities and processes, or to address these gaps through other management tools. In addition, the gaps identified through this process will be used to facilitate regional planning and collaboration that may ensue as described in Section V (A).

This section outlines the process for identifying gaps in the national system. The process will be comprehensive, taking into account existing MPAs and other conservation measures currently in place. The gap analysis process will be implemented iteratively, relative to targeted specific national system conservation objectives, and on region-by-region bases as described below. Conservation gaps in the national system may exist in a number of forms and can be generally described as:

Representation gaps: where a particular habitat, ecosystem, or cultural resource type is either un-represented or underrepresented in the national system.

Ecological gaps: where important species, habitats, ecosystems, or processes fundamental to the national system's goals are not adequately protected to ensure their lasting conservation and sustainable use.

Management gaps: where the management regimes (management objectives or governance types) of MPAs in the national system do not fully provide for lasting conservation or sustainable production of a particular species, habitat, cultural resource, or ecosystem.[8]

Efforts to identify conservation gaps will include the collection and analysis of the best available scientific information and analyses, including traditional ecological knowledge, to identify important marine areas on multiple scales, coupled with an analysis of existing levels of place-based protection in those areas. The resulting gaps in protection will be identified relative to fully achieving the national system conservation objectives and design principles outlined in Sections III (B) and (C), respectively.
Gap identification efforts will be focused at the regional scale, and will be collaborative, involving MPA-related and other entities at various levels of government, FMCs, and other organizations and institutions in synthesizing and analyzing existing scientific information, including traditional ecological knowledge, where available, and established conservation priorities. The effort to identify conservation gaps will include opportunities to review and comment on the process and its results by the public, the MPA FAC, relevant federal agencies, state and tribal governments, and other entities, including the National System Management Committee (Management Committee) described in Section V (B).

The MPA Center also will work with existing or incipient regional marine entities and initiatives to coordinate with their broad management efforts, as appropriate. Efforts to identify gaps will also consider and include relevant international participation and linkages. The effort aims to provide government agencies with a program-neutral opportunity for collaborative assessment and planning, while ensuring that stakeholders are both informed and involved.

The MPA Center will work with diverse partners, as appropriate, through the following processes to identify gaps in fully achieving the national system's conservation objectives:

1. Publish, on an as-needed and sequential basis, subsets of the near-term, mid-term, and long-term national system conservation objectives listed in Section III (B) as iterative targets for conservation gap identification.

2. On a regional basis, aggregate, map, and describe relevant and readily available existing data and analyses about important species, habitats, cultural resources, and ecosystems that could contribute to the national system goals and priority conservation objectives.

3. Map and describe, by region, the location and management attributes of existing MPAs that contribute to achieving the targeted national system conservation objectives.

4. Integrate spatial data on ecosystems and place-based management to identify important areas where protection is either lacking or potentially inadequate to achieve national system goals and objectives.

5. Identify key stakeholders in the region and provide identified gaps and background information to the public for comment.

6. Seek input on identified gaps from federal agencies, states, and tribal leaders with management authority in the corresponding region.

[8] Adapted from: Nigel Dudley and Jeffrey Parish (2006). Closing the Gap. Creating Ecologically Representative Protected Area Systems: A Guide to Conducting the Gap Assessments of Protected Areas Systems for the Convention on Biological Diversity. Secretariat of the Convention on Biological Diversity. Montreal, Technical Series no. 24, vi + 108 pages.

7. Seek input on identified gaps from the Management Committee.

8. Provide identified gaps, background information, and a summary of all public and Management Committee comments received to the MPA FAC for consideration and development of prioritized recommendations to DOC and DOI.

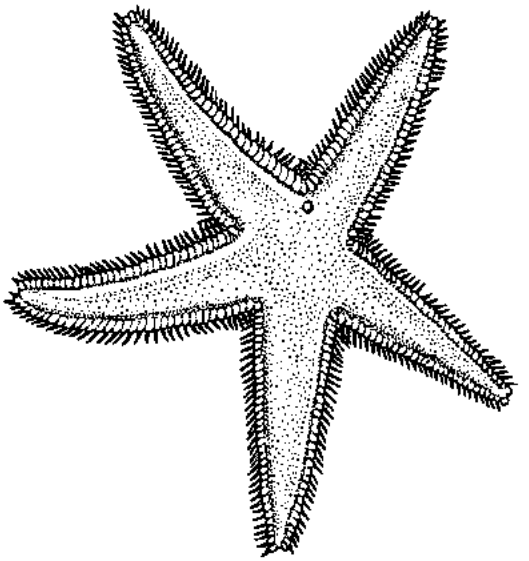
9. Upon consideration of all input and recommendations, the MPA Center will publish prioritized national system conservation gaps and corresponding descriptive information for use by managing entities and stakeholders to strengthen existing MPAs or add new MPAs where needed. Information about the conservation gaps identified will be maintained on the http://www.mpa.gov website. Gap analyses will be updated periodically as resources permit.

Finally, while the publication of these identified conservation gaps is a major step toward building a comprehensive national system, significant additional evaluation of these gaps and other information will likely be needed by agencies prior to any resulting establishment of new MPAs or changes to existing MPAs' governance. Specifically, managing entities will need to work with stakeholders under the auspices of appropriate MPA authorities to: (i) evaluate these gaps; (ii) incorporate data on human uses and impacts and related societal and economic considerations; and (iii) assess management priorities to make an informed decision about appropriate next steps in response to an identified conservation gap. These steps might include the establishment of a new MPA, changes to existing MPAs, additional research, or some other alternative. Establishment of new MPAs or changes to the governance of existing MPAs must follow relevant processes under established authorities.

The MPA Center can serve as a resource to assist managing entities and stakeholders with such analyses and regional planning processes, as described in Section V (A). Similarly, identified gaps will be considered by the MPA Center and the Management Committee in prioritizing national system science and stewardship actions. The MPA Center also will report on actions taken by managing entities to address these gaps.

E. Establishing New National System MPAs

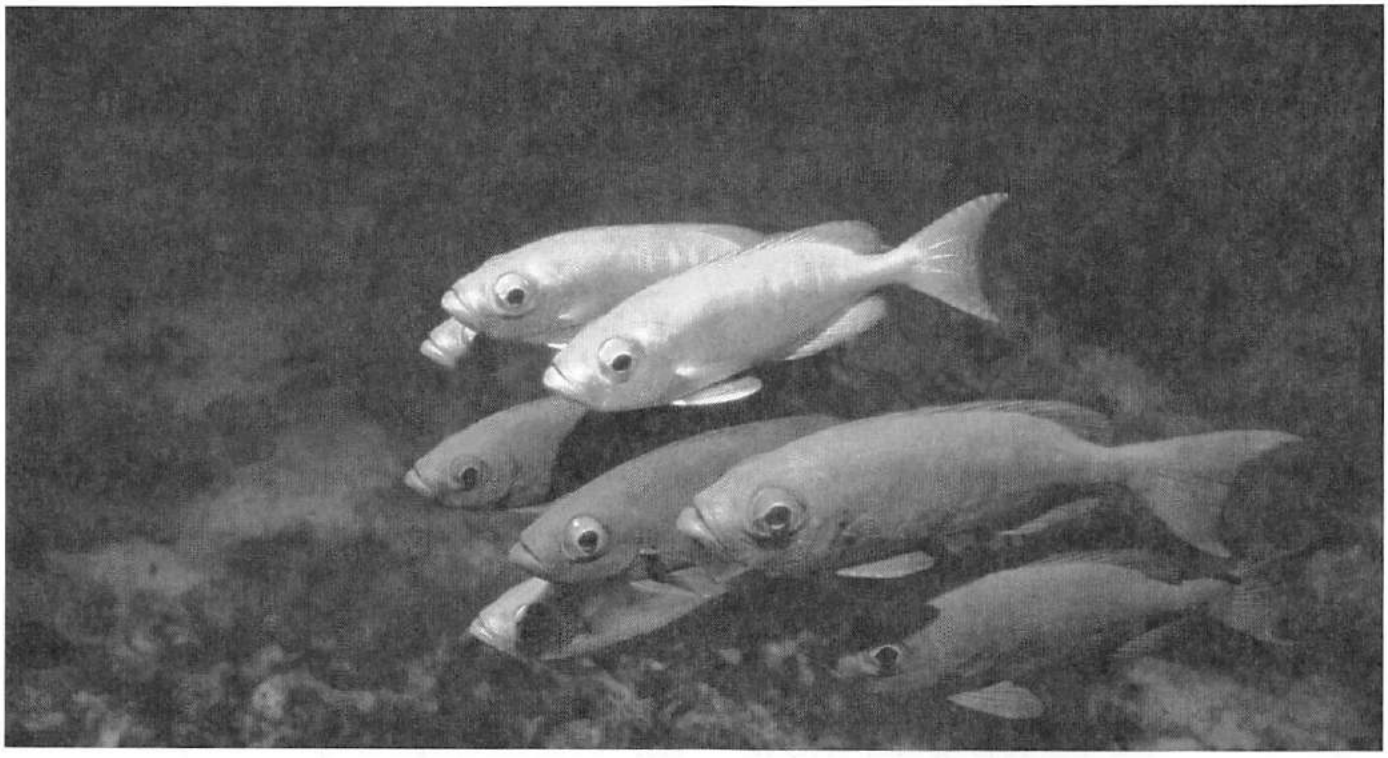
The Framework lays out the processes for identifying conservation gaps in the national system (see Section IV (D)) and developing recommendations for new or enhanced MPAs through collaborative ecosystem-based MPA planning (see Section V (A) (2)). However, neither the Order nor the Framework provides authority to designate or establish new MPAs or alter protections afforded by existing MPAs. Section 4(e) of the Order states:



The goal of the MPA Center shall be, in cooperation with the Department of the Interior, to develop a framework for a national system of MPAs, and to provide Federal, State, territorial, tribal, and local governments with the information, technologies, and strategies to support the system. This national system framework and the work of the MPA Center is intended to support, not interfere with, agencies' independent exercise of their own existing authorities.

These national system processes are intended to offer a more collaborative, systematic and comprehensive approach to MPA planning than currently exists. Recommendations for new or enhanced MPAs that stem from these processes offer entities with MPA management authority valuable guidance for taking independent or cooperative action to establish and/or manage MPAs that meet program mandates while also enhancing regional and national conservation priorities. Moreover, such processes and recommendations offer stakeholders opportunities and information with which to meaningfully engage in MPA decision making efforts.

New MPAs that may eventually be established based on these national system recommendations would subsequently be considered for inclusion in the national system pursuant to the eligibility criteria and nomination process outlined above. Stakeholder participation in the designation process for new MPAs is unchanged by the national system and occurs as specified through the required public consultation processes associated with the authorized designation process.



V. IMPLEMENTING THE NATIONAL SYSTEM OF MPAS

Over time, as MPA sites, programs, and systems are added to the national system, efforts to implement the national system – both regionally and nationally – will be initiated. A major emphasis of the MPA Center will be to facilitate and support collaborative implementation efforts with participating MPA sites and programs, subject to available resources. The timing of the implementation elements, described below, may be sequential, simultaneous, or otherwise, depending on resources available and the priorities of national system partners. Significant additional resources will be needed to realize the full potential of each element. In addition, monetary and nonmonetary incentives would greatly enhance state, tribal, and local participation in the national system, thereby increasing its conservation impact. National system implementation components, guided by the national system's design planning and implementation principles described in Section III (C), include:

- *Enhancing regional coordination and collaboration* – formalizing new and/or supporting existing regional mechanisms to provide for effective, efficient coordination and collaboration among participating MPA sites, systems, and programs.
    - *Improving MPA stewardship and effectiveness* – identifying and prioritizing shared needs for improvements in MPA science, management, and stewardship at regional and national levels and catalyzing partnerships and action to address identified priorities for existing MPAs.
    - *Regional MPA planning* – developing and applying the natural and social science information, decision making tools, and stakeholder engagement processes to evaluate collaboratively the conservation gaps identified in the national system and make recommendations about the need for new and/or enhanced MPAs.
- *National and international coordination* – establishing and implementing a National System Management Committee to serve to link across regions where resource conservation and MPA planning and management issues span regional boundaries and to identify and pursue international MPA linkages to the national system.
- *Evaluating national system effectiveness* – providing technical and scientific support for fostering sound monitoring and evaluation programs at the participating MPA site or system level, as well as development of a set of standards and protocols for assessing broader national system effectiveness.
- *Federal agency responsibilities to avoid harm* – providing guidance regarding Section 5 of the Order, which requires federal agencies to "avoid harm" to the natural and cultural resources protected by MPAs that become part of the national system.
- *Tracking and reporting* – maintaining the http://www.mpa.gov website and producing a biennial State of the National System report and other mechanisms for communicating national system activities, progress, and plans.

A. Enhancing Regional Coordination and Collaboration

Within the national system, effective regional coordination and collaboration are critical for sharing information and experiences, identifying common priorities and collaborative solutions for enhancing the effectiveness of existing sites, and improving planning and decision making for new MPAs. In the same way, effective regional collaboration must also include making necessary linkages to other marine management initiatives and collaboration mechanisms. For example, the federal Seamless Network initiative, the developing U.S. Integrated Ocean Observing System, coordination with the Regional Fishery Management Councils and Inter-State Fishery Management Commissions, and ongoing or planned regional ocean or Great Lakes initiatives by state governors may offer opportunities for efficiently strengthening MPA collaboration, in addition to working with individual states.

The national system will use U.S. **large marine ecosystems** (LME) as the broadest framework for regional scientifically-based planning and collaboration, recognizing that certain of these regions do not efficiently or fully encompass the political regions of the United States that would be necessary for effective collaboration (Figure 5). For example, the three LMEs associated with the state and federal waters off Alaska can be combined for the purposes of regional MPA collaboration, as could the United States waters of the Caribbean and Gulf of Mexico. Nonetheless, these regions are intended to serve as the broadest framework for regional collaboration, recognizing that other established regions, whether biophysical (e.g., biogeographic regions) or political (e.g., FMC regions), may be nested within LMEs and may serve as more appropriate scales for MPA planning and collaboration. In addition, some issues, such as those pertaining to endangered and threatened species, may require regional collaboration across two or more LMEs.

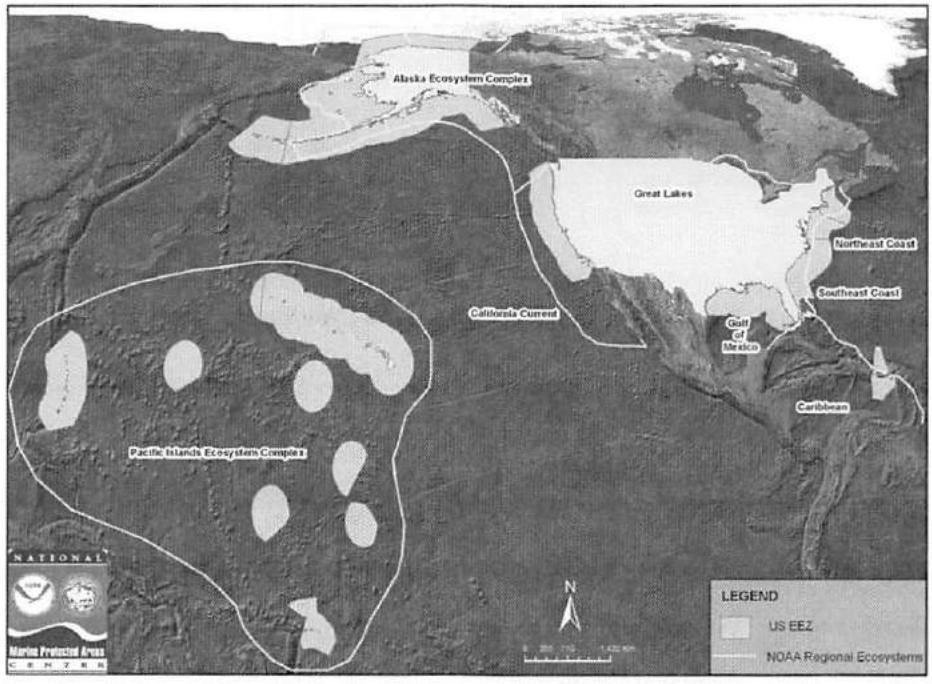


Figure 5. NOAA Regional Ecosystems of the United States

The national system's regional collaboration framework will be built at the broadest level around the following regions, each encompassing state and federal waters, as relevant:

- **Alaska:** Gulf of Alaska, East Bering Sea, and Arctic Seas
- **West Coast:** California, Oregon, and Washington
- **Great Lakes:** Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio, Pennsylvania, and New York
- **Gulf of Mexico:** Texas, Louisiana, Mississippi, Alabama, and Florida
- **Caribbean:** U.S. Virgin Islands, Puerto Rico, and Navassa Island
- **Northeast:** Virginia, Maryland, Delaware, New Jersey, New York, Connecticut, Rhode Island, Massachusetts, New Hampshire, and Maine
- **Pacific Islands:** Hawai'i, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and the Pacific Remote Insular Areas (Baker Island, Howland Island, Jarvis Island, Johnston Atoll, Kingman Reef, Wake Island, and Palmyra Atoll)
- **Southeast:** Florida, Georgia, South Carolina, and North Carolina

A variety of approaches exist for enhancing regional MPA coordination and collaboration. The appropriate mechanism for any particular region depends in large part on its biophysical and political characteristics and

on the specific goals for which the coordination and collaboration are initiated. The MPA Center will work with all participating state, tribal, and federal MPA sites and programs and existing regional entities in each region to establish and/or formalize an appropriate regional MPA coordination and collaboration mechanism, such as a regional MPA working group, forum, or dialogue.

The MPA Center will consult with participating managing entities in the region to determine the most suitable type (e.g., informal, formal) of coordination and collaboration and the appropriate regional scale. This task includes identifying existing regional MPA and related marine coordination initiatives and determining efficient ways to complement, support or integrate with those efforts, while ensuring opportunities for all national system partners to be represented and for the public to participate.

The facilitation of formalized regional coordination and collaboration mechanisms for the national system is intended to provide a forum for MPA managing entities to work together in an open, transparent manner to:

- develop regional MPA effectiveness and stewardship strategies that identify and prioritize shared needs for improving the effectiveness of existing MPAs in the region (see Section V (A)(1));
- catalyze collaborative initiatives and projects to address identified science and stewardship needs;
- further evaluate identified national system conservation gaps, undertake collaborative, ecosystem-based MPA planning, solicit stakeholder input, and make specific recommendations about the need for the establishment of new MPAs (see Section V (A)(2));
- facilitate continued and new managerial collaboration among MPAs across regional, national, and international boundaries, to promote consistent approaches to monitoring, enforcement, emergency response, threat abatement, and coordination with other countries and international organizations (such as through transboundary MPAs) and ensure compliance with international law;
- coordinate ecosystem and/or regional input to the national system and recommend annual and longer-term regional science and other priorities based on shared MPA needs across the region;
- develop informal and formal partnerships to achieve economies of scale. For instance, arrange for the sharing of technical and financial resources for monitoring, surveillance, enforcement, staff training, etc.; and
- develop and implement strategies for engaging and informing stakeholders about regional MPA planning, effectiveness, and stewardship activities.

1. Improving MPA Stewardship, Science, and Effectiveness

A significant purpose of the Order is to "strengthen the management, protection, and conservation of existing [MPAs]..." (Section 1 (a)). As such, a major emphasis of the national system is to provide support for the shared science, technical, education, and other priority stewardship needs of partner MPA programs to enhance the national system's effectiveness. With this in mind, collaborative efforts should work to enhance the effectiveness of and provide benefits to existing efforts of MPA programs without creating additional responsibilities that detract from the important work of partners in meeting their existing programmatic authorities.

Formalizing regional coordination mechanisms via the national system offers a unique forum for collaboration to improve the effectiveness and stewardship of existing MPAs by identifying common needs across MPA programs. To this end, the MPA

Center will consult with participating federal, state, and tribal managing entities through formalized regional MPA coordination and collaboration forums to develop regional MPA Stewardship, Science, and Effectiveness Strategies (Strategies). These Strategies will identify, inventory, and prioritize shared science, education, research, management, and other needs for improving MPA stewardship, science, and effectiveness. Wherever possible, these Strategies will incorporate or build upon relevant priorities previously identified through other mechanisms to avoid duplicative efforts.

The development of Strategies is intended to provide an efficient mechanism for the MPA Center to work with participating MPA sites and programs to gather information that will serve as the basis for catalyzing collaborative actions to address shared priorities. The MPA Center will also aggregate the priorities identified in the regional Strategies into a national set of priorities and use these priorities to catalyze large-scale projects and initiatives.

The following are examples of the types of priority science and stewardship issues that may be identified and addressed through the development of regional Strategies and subsequent collaborative actions among MPA programs to improve MPA effectiveness:

- **Enhancing MPA management capacity**
  - management plan development and review;
  - managing visitor and user impacts;
  - enforcement and compliance practices;
  - best practices for meaningful stakeholder involvement; and
  - sustainable financing mechanisms.
- **Improving MPA science and research**
  - developing science-based tools to identify and measure regional, ecosystem, and site connectivity;
  - building collaborative strategies for establishing biophysical, social, and economic baselines for MPAs and monitoring trends in these conditions; and
  - examining the effects of invasive species on MPAs.
- **Promoting outreach and education**
  - developing educational programs;
  - improving awareness and understanding of the importance of marine resources and the role of MPAs in marine management; and
  - improving public stewardship of marine resources through volunteer programs and other efforts.
- **Improving the evaluation of MPA effectiveness**
  - training and technical assistance on developing relevant indicators and protocols for monitoring and evaluating management effectiveness for individual MPAs and networks of MPAs;
  - identifying consistent indicators for examining marine habitat and resource recovery and social and economic conditions associated with MPAs; and
  - synthesizing recovery trajectories for marine resources to aid managers, stakeholders, and the public in interpreting monitoring results and understanding habitat and resource restoration.

The Strategies will reflect shared needs, and will be implemented, subject to the availability of funds and other resources, through partnerships among MPA programs and others. Possible mechanisms to implement the Strategies could include:

- training and workshops;
- direct technical assistance and tools;
- contractual or grant funding;
- best practices or technical publications;
- sharing of knowledge and experience across MPA sites and programs;
- clearinghouse for research on MPA issues;
- targeted research;
- facilitation of linkages with international MPA programs and activities; and
- other mechanisms as identified.

2. Regional MPA Planning

The establishment or enhancement of regional MPA coordination forums via the national system offers an opportunity for managing entities and stakeholders to look beyond their individual jurisdictions, mandates, programs, and interests and consider regional and/or ecosystem-based approaches to MPA planning.

The MPA Center will work with regional, national, and international partners, where appropriate, to develop and apply the natural and social science information, decision making tools, and stakeholder engagement processes to collaboratively evaluate conservation gaps identified in the national system and make recommendations about the need for new and/or enhanced MPAs.

Such an ecosystem-based MPA planning effort could include, but is not limited to, the following critical planning steps or components:

- An evaluation and synthesis of national system design principles and conservation gaps and other regional and/or programmatic marine conservation targets, in order to more comprehensively establish regional conservation objectives to guide ecosystem-based planning.
- The characterization of marine natural resources (natural resources, habitats, ecosystems, ecological processes) and marine cultural resources in the region.
- An assessment of human uses and their impacts, including the documentation and characterization of the patterns, intensity, and significance of human uses; existing governance frameworks; and assessments of conflicts, compatibilities, and potential impacts of human uses on marine ecosystems.
- The development and use of decision tools to identify and recommend areas in need of additional or enhanced protection.
- Facilitation of stakeholder outreach and engagement processes to ensure the public and other stakeholders are informed of planning activities and have an opportunity to provide input into decision making processes.
- Development of recommendations for new or strengthened MPAs to meet regional and national priority conservation objectives and mechanisms and processes for relevant MPA authorities in establishing new MPAs or otherwise implementing recommended actions.

B. National and International Coordination

National Coordination

In addition to enhancing regional coordination among MPAs, a corresponding national level effort is needed. Such an effort will represent and promote the priorities and issues of the various ecosystems and regions that make up the nation, as well as look more broadly at important national and international trends, developments, priorities, and legal obligations. National coordination also will serve to link across regions where resource conservation issues and MPA planning and management span regional boundaries. As required by the Order, the MPA Center will

facilitate coordination at the national level. The Management Committee, described below, will be established as part of this coordination.

The Management Committee should, where possible, be composed of one representative each from a federal, state, tribal, and local government and Regional Fishery Management Council within the region, as well as the members of the Federal Interagency MPA Working Group. The committee will provide operational guidance to the national system from the perspective of MPA managers. The MPA FAC will continue to provide recommendations to DOC and DOI on the implementation of the Order and on national system implementation from a stakeholder perspective.

The Management Committee will:

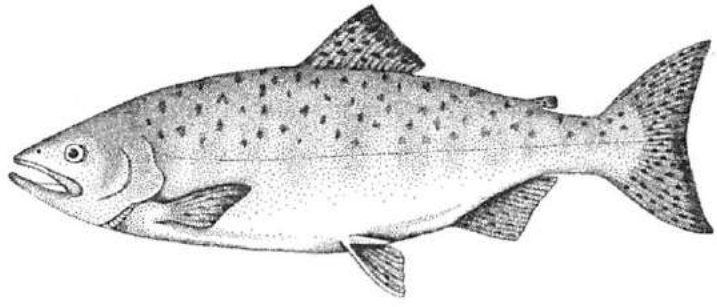
- provide advice to the MPA Center on annual and long-term priorities and plans for national system support to sites and regions, based on regional stewardship and other priorities and the recommendations of the MPA FAC;
- identify management issues and other priorities that require inter-regional, national, and/or international coordination or efforts; and
- review and provide comment on conservation gaps identified at the ecosystem, regional, and/or national levels.

Regional representatives to the Management Committee will be selected by the participating MPA managing entities in the region. Each federal agency will maintain an appointed ex officio member of the Federal Interagency MPA Working Group, who also will serve on the Management Committee. Finally, two MPA FAC members, representing different stakeholder interests, will serve as ex officio members of the Management Committee.

International Coordination

In addition to U.S. MPA programs and authorities, there are numerous international MPA efforts and linkages that can contribute to and benefit from the national system. The United States shares a number of common resources with both neighboring and distant countries, and technical capabilities reside in many countries, organizations, and institutions around the world. In recognition of these important international connections, Section 4(a)(8) of the Order calls on federal agencies to identify opportunities to improve "linkages with, and technical assistance to, international [MPA] programs."

For instance, migratory species (e.g., whales, sea turtles, pelagic fishes, and birds) rely on the marine and coastal waters of multiple countries during various stages of their lives. In addition, there are also a number of international law and policy issues regarding our underwater cultural heritage. For example, certain cultural resources that rest in the seabed of U.S. MPAs, such as sunken military craft and associated contents that have not been abandoned, have a protected sovereign status and permanent right, title, and interest may be vested in the flag country.



To strengthen international coordination on MPA issues, the MPA Center, representing the National System of MPAs, and the Management Committee, in coordination with the U.S. Department of State and internationally relevant regional forums, can seek to enhance existing or establish new linkages with efforts in other countries, in accordance with international law. Such linkages should be focused on issues of mutual benefit to U.S. and international MPAs and MPA programs, such as policy coordination, collaborative activities, information and capacity sharing, capacity building, and technical assistance.

C. Evaluating National System Effectiveness

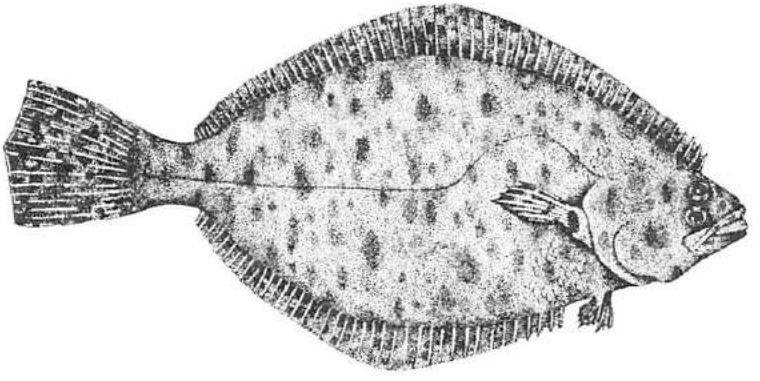
Monitoring and evaluating management effectiveness is a key component of an effective, adaptively managed national system. To this end, the Order calls for "practical, science-based criteria and protocols for monitoring and evaluating the effectiveness of MPAs" (Section 4(a)(5)). Monitoring and evaluation efforts of the national system are focused on measuring the effectiveness of the national system in achieving its priority conservation objectives and management objectives and the contributions of participating national system MPAs and MPA programs in achieving those objectives. It is not a function of the national system to monitor or evaluate individual MPAs or MPA programs, although the national system can provide assistance to MPA programs to assist them in better evaluating their own efforts. Stakeholders with an interest in participating in the monitoring of individual MPAs or MPA programs should consult with the managing entity or entities.

The national system's approach to evaluating effectiveness will include:

- technical and scientific support for fostering sound monitoring, and evaluation programs at the participating MPA site or system level;
- development and implementation of a set of standards and protocols for assessing broader national system effectiveness. In order to be efficient and effective, the development of such standards and protocols requires significant input and advice from participating national system MPA sites and systems; and
- cooperation with existing or developing observation, monitoring and evaluation programs.

The natural and social science data currently collected and used by MPA sites and systems to monitor and evaluate their own effectiveness will not only help in their adaptive management efforts, but also will contribute to the analysis of the national system's success in meeting its goals. The national system will aim to support the tools and technical assistance needed by partner MPA sites and systems to effectively monitor and evaluate their own effectiveness. It will not create new requirements for sites or systems to undertake new or expanded monitoring and evaluation activities.

With advice from the MPA FAC, the Management Committee, national system MPA partners in the regions, and science and management experts, the MPA Center will develop and publish guidance for monitoring and evaluating the effectiveness of the national system.



These guidelines will provide an integrated approach for monitoring the effectiveness of the national system, including the degree to which the priority conservation objectives are met and the benefits are provided to participating MPA sites and systems.

In addition, if identified as stewardship priorities by participating MPA sites and systems, training and technical assistance efforts targeted at monitoring and evaluation can be developed, such as establishing relevant sets of natural and social science indicators and protocols.

The results of monitoring and evaluating the national system will be used to manage the system adaptively and identify future focus areas for stewardship and other initiatives, including but not limited to: conservation gaps; technical and other forms of assistance in support of MPA sites and programs; and necessary changes to the national system's goals, objectives, or other components.

D. Federal Agency Responsibilities to Avoid Harm

Section 5 of the Order calls for federal agencies to "avoid harm" to the natural and cultural resources protected by MPAs that become part of the national system. Each federal agency is responsible for its own implementation of its responsibilities under Section 5.

The Order states:

Each Federal agency whose actions affect the natural or cultural resources that are protected by an MPA shall identify such actions. To the extent permitted by law and to the maximum extent practicable, each Federal agency, in taking such actions, shall avoid harm to the natural and cultural resources that are protected by an MPA. In implementing this section, each Federal agency shall refer to the MPAs identified under subsection 4(d) of this order.

Implementation

To implement Section 5 of the Order:

- The MPA Center will collect, maintain, and make publicly available via the MPA Center's website, http://www.mpa.gov, and *Federal Register* notices, all relevant regulatory and resource information for MPAs that are subject to agency requirements under Section 5, in the form of a List of National System MPAs. National system MPAs included in the List are those that have satisfied the requirements outlined in Sections III (B) and (D) of the Framework and are officially a part of the National System of MPAs. Information maintained for each national system MPA on the List will include: site name, location, national system MPA category, priority conservation objective(s) contributed to, boundaries, key resources protected, authorizing legislation, level and types of protection, managing authority/program, name of point of contact, and relevant contact information.

- Federal agencies shall: (1) identify their activities that affect the natural or cultural resources protected by individual national system MPAs, and (2) to the extent permitted by law and to the maximum extent practicable, avoid harm to those resources. Both of these activities should be accomplished through existing natural or cultural resource management or review authorities and procedures, including, but not limited to those under:
  - National Environmental Policy Act;
  - Coastal Zone Management Act;
  - National Historic Preservation Act;
  - Endangered Species Act;
  - Federal Water Pollution Control Act (Clean Water Act);
  - Marine Mammal Protection Act;
  - National Wildlife Refuge System Administration Act;
  - National Park Service Organic Act;
  - Rivers and Harbors Act;
  - Sunken Military Craft Act;

- National Marine Sanctuaries Act (Title III of the Marine Protection, Research, and Sanctuaries Act);
- Magnuson-Stevens Fishery Conservation and Management Act;
- Outer Continental Shelf Lands Act;
- Coral Reef Conservation Act;
- Energy Policy Act of 2005; and
- Other pertinent statutes and Presidential Executive Orders.

- Upon receipt of a federal agency's request for assistance, the MPA Center will work to facilitate support for policy and coordination assistance through existing agency review processes.

- As needed, the MPA Center, working with federal agencies, will produce voluntary technical guidance and best practices on priority issues to assist federal agencies in their determination of impacts to marine resources protected by national system MPAs and options for avoiding harm. The MPA Center also will work with federal agencies to provide clear public outreach materials to educate and inform the public on the requirements of Section 5.

- Federal agencies will report their actions to implement Section 5, any comments received, and responses to such comments on an annual basis as part of the agency report required by Section 6 of the Order. The MPA Center, as required by the Order, will post these reports on the http://www.mpa.gov website.

Activities to Be Considered

The implementation of Section 5 is governed by existing authorities, each with its own threshold and/or trigger for requiring individual federal agencies to identify, review, mitigate, or otherwise alter their activities based on impacts to natural or cultural resources. The Order does not provide any new authority for any federal agency or the MPA Center to review activities of any other federal agency or alter standards for existing review. The thresholds and/or triggers for agency action under Section 5 are the same as those listed under any existing authority or authorities that normally require agency review of a proposed activity. Section 5 does, however, require agencies to ensure that their activities avoid harm to the natural and cultural resources as protected by the MPAs included in the national system (to the extent permitted by law and to the maximum extent practicable) when fulfilling their existing requirements for identifying, reviewing and implementing activities.

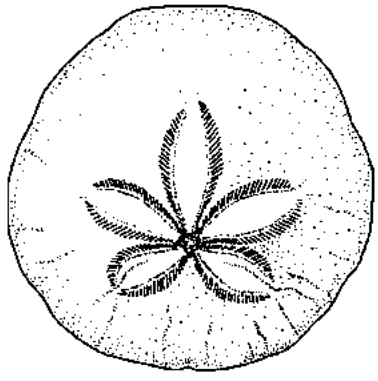
Furthermore, there is no single definition for key terms used to describe the requirements under Section 5, including but not limited to: "avoid harm," "affect," or "to the extent permitted by law and to the maximum extent practicable." Instead, the meaning of any of these terms, as applied to an agency's requirements under Section 5, is dependent on the agency's interpretation, consistent with any requirements of the legal framework used to protect the resources of the MPA and any other applicable natural or cultural resource review or protection authorities or procedures.

Pursuant to Section 5 of the Order, agency requirements apply only to the natural or cultural resources specifically afforded protection by the site as described on the List of National System MPAs. For example, within national system MPAs established for sustainable production, other resources not specifically protected by the MPA would not be subject to the "avoid harm" provision. For sites that have both a terrestrial (i.e., an area that falls outside of the definitional boundaries of 'marine') and marine area, only the marine portion and its associated protected resources will be included on the List of National System MPAs and subject to Section 5 of the Order. To implement Section 5, each federal agency shall identify its activities that affect the natural or cultural resources protected by a national system MPA through the existing natural and cultural resource review processes normally required for these activities.

Similarly, the determination of whether an agency in taking such actions is avoiding harm to those resources, to the extent permitted by law and to the maximum extent practicable, will be made by the individual agency using its existing natural and cultural resource review processes and/or authorities.

Comment and Response on Agency Actions

Comments from any person, organization, or government entity concerning federal agency compliance with Section 5 should be directed to the relevant lead federal agency for the action or actions that are the subject of the comments. Each agency shall make a determination on the response and take appropriate action. Similarly, any requests for information regarding compliance with Section 5, including those under the Freedom of Information Act (FOIA), should be directed to the lead agency for the action or actions that are the subject of the request. Any comments or requests for information received by the MPA Center or any federal agency in regard to another agency's compliance with this Section shall, pursuant to FOIA procedures, be forwarded in a timely manner to the relevant responsible agency for its consideration, with due notice given to the sender.



Reporting and Periodic Review

As required under Section 6. Accountability of the Order, "[e]ach Federal agency that is required to take actions under the order shall prepare and make public annually a concise description of actions taken by it in the previous year to implement the order, including a description of written comments by any person or organization stating that the agency has not complied with this order and a response to comments by the agency." These annual reports, including a point of contact for each federal agency, will be posted at http://www.mpa.gov. In addition, on a biennial basis, the MPA Center will consolidate agency annual reports into a biennial "State of the National System of MPAs" report. The biennial report will include an assessment of overall progress to develop the National System of MPAs and the effectiveness of meeting its stated goals and objectives, including those related to Section 5 of the Order. More information on the biennial report can be found below in Section V (E) of this document.

E. Tracking and Reporting

Tracking and reporting of the national system are important activities for communicating regional and national accomplishments and priority future efforts in need of support. In order to track and report progress, the MPA Center will coordinate a biennial "State of the National System of MPAs" progress report and post all available data and assessments on the http://www.mpa.gov website. In addition, the MPA Center will work with the Management Committee and participating MPA sites and programs to determine how best to comprehensively track overall national system priorities once efforts to establish the sytem have been initiated. Additional information on these efforts is provided below.

Biennial "State of the National System of MPAs" Progress Report

On a biennial basis, the MPA Center, working with its national system partners, will develop and publish on the http://www.mpa.gov website a consolidated "State of the National System" progress report, in accordance with Section 6 of the Order. The report will consolidate and summarize the annual reports submitted by federal agencies for the period and

also will include information from states and other management entities. It will include:

- a list of existing National System MPAs and newly added or removed sites;
- a summary of federal activities taken in support of the national system;
- a summary of regional, national, and international planning efforts;
- a summary of assistance provided to national system MPAs;
- an evaluation of the effectiveness of the national system in meeting its goals and objectives at the national and regional levels;
- a summary of actions taken to implement Section 5 of the Order;
- any recommendations developed by the MPA FAC during the period;
- a description of public comments received and responses sent during the period; and
- regional, national, and international priorities for future coordination, planning, technical, and other types of support (see Sections V (A) and (B) of this document).

MPA.gov Website

As required by the Order, the website http://www.mpa.gov will be maintained to communicate and archive all information about the development and implementation of the national system. The website will house information about a variety of technical, scientific, governance, and other MPA topics relevant to the breadth of MPA stakeholders, including the MPA FAC. In addition, the website will house information on national system progress, priorities, and plans, including:

- MPAs found to be eligible for nomination to the national system;
- MPAs and MPA systems that have been included in the national system;
- areas and resources identified as national system conservation gaps;
- recommendations for new or enhanced MPAs resulting from regional MPA planning;
- regional MPA science, stewardship, and effectiveness strategies and national and other priorities for improving stewardship and effectiveness;
- international activities and commitments;
- information on the nomination process and supporting analyses;
- information related to the evaluation of national system effectiveness;
- agency and MPA Center reports;
- public comments received on MPA nominations to and removals from the national system; and
- the official List of National System MPAs.

F. MPA Federal Advisory Committee

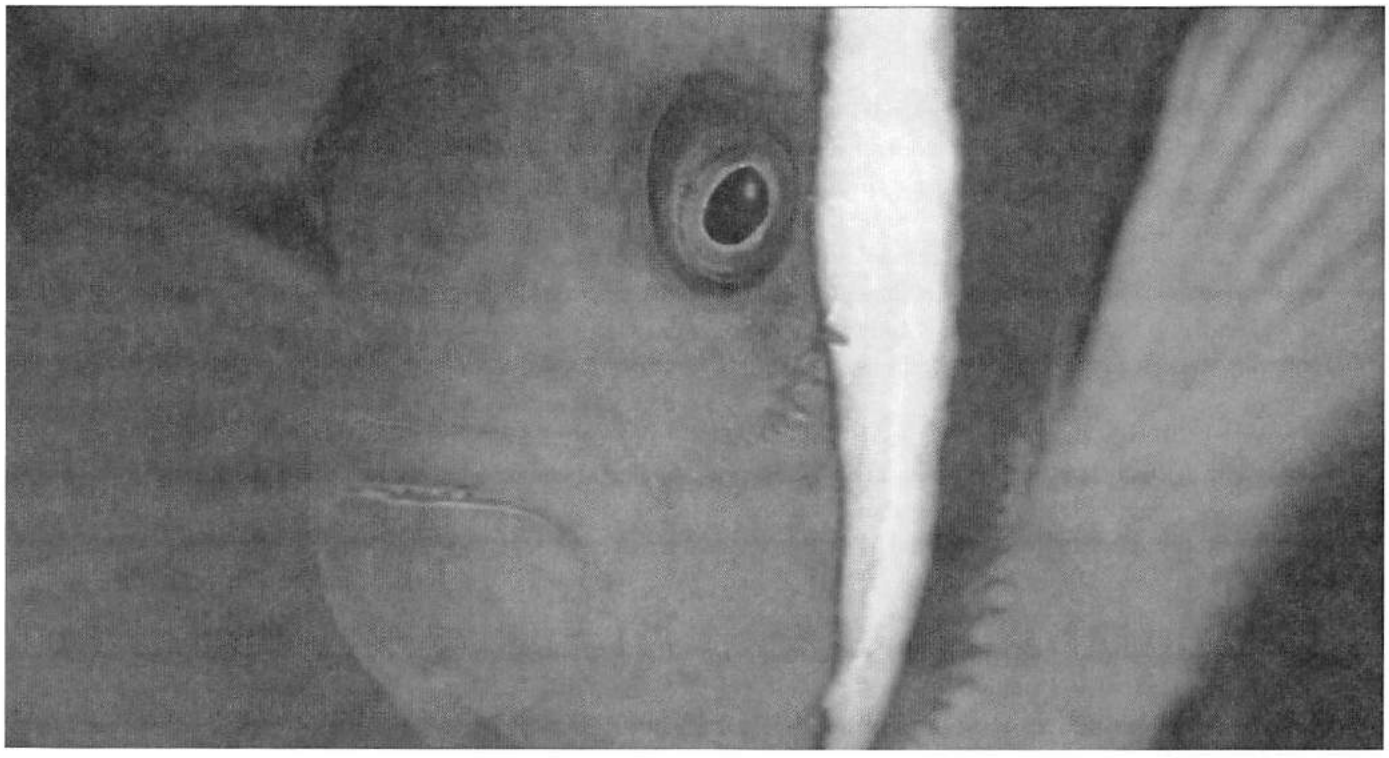
The MPA FAC is authorized by the Order to provide expert advice and recommendations to DOC and DOI on the development and implementation of the National System of MPAs and implementation of the Order. The MPA FAC is comprised of 30 non-federal members representing regionally diverse perspectives and areas of expertise from all regions of the country, including natural and social science, commercial and recreational fishing, tribal and state governments, oil and gas, tourism, environmental organizations, and others. It also includes ex officio members from pertinent federal agencies. A full description of the MPA FAC can be found in Appendix B and a list of the MPA FAC members, past and present, can be found in Appendix E of this document.

Throughout the development and implementation of the national system, the MPA FAC will continue to advise DOC and DOI on priority topics and issues as identified by the agencies. The MPA FAC also will provide recommendations to the MPA Center concerning national system conservation gaps, as described in Section IV (D) above.

G. Role of the National MPA Center in the National System

The specific roles of the MPA Center in coordinating the national system are to:

- provide coordination and facilitation of the national system as a whole (individual MPA programs and managing entities remain responsible for administering their sites and systems);
- coordinate processes to identify, nominate, and include eligible MPAs in the national system, remove MPAs from the national system, and maintain the List of National System MPAs;
- build public and private partnerships and catalyze action to support the identified science, stewardship, and effectiveness priorities of participating MPA programs;
- facilitate the development and maintenance of regionally appropriate MPA coordination mechanisms among participating programs, and, where possible, maintain a Regional MPA Coordinator in the field to support such efforts;
- develop, in consultation with participating programs, regional MPA Science, Stewardship, and Effectiveness Strategies;
- lead collaborative efforts to identify conservation gaps in the national system;
- build and catalyze partnerships and actions to provide technical or scientific information, staff, or other support for collaborative ecosystem-based MPA planning in order to identify and recommend new or enhanced MPAs;
- promote stewardship of the national system through effective outreach and education;
- support the operation of the MPA FAC and the coordination of the MPA Federal Interagency Working Group and Management Committee;
- track, communicate, integrate, and recommend suggested MPA science and other national system priorities, needs, and commitments across the regional, national, and international levels;
- develop a biennial "State of the National System of MPAs" report and maintain comprehensive information about the national system's priorities and progress on the http://www.mpa.gov website;
- monitor and evaluate the effectiveness of the national system and implement adaptive management strategies based on results; and
- maintain the http://www.mpa.gov website as a mechanism for communicating information about the national system.



VI. GLOSSARY OF KEY TERMS

The following are definitions of key terms as used in this Framework document. See Table 2 for the full definition of key terms used in the definition of an MPA.

Adaptive management – "A systematic process for continually improving management policies and practices by learning from the outcomes of operational programs." (British Columbia Forest Service, http://www.for.gov.bc.ca/hfp/amhome/Amdefs.htm).

Area – Must have legally defined geographical boundaries and may be of any size, except that the site must be a subset of the United States federal, state, local, or tribal marine environment in which it is located.

Biodiversity – The variety of living organisms in all their forms. Technically, biodiversity includes variety at three levels of biological organization: genetic variation within species, the variety of species, and the variety of ecological communities.

Conservation area – Multiple uses allowed; however, uses and activities may be restricted or zoned and access limited, as necessary to meet site management goals.

Cultural heritage – The cultural resources that reflect the nation's maritime history and traditional cultural connections to the sea, and the uses and values they provide to present and future generations.

[Marine] Cultural resource – A tangible entity that is valued by or significantly representative of a culture, or that contains significant information about a culture. Cultural resources for purposes of the MPA Executive Order are tangible entities at least 50 years in age that reflect the nation's maritime history and traditional cultural connections to the sea, such as archaeological sites, historic structures, shipwrecks, artifacts, and traditional cultural properties. Cultural resources are categorized as districts, sites, buildings, structures, and objects for the National Register of Historic Places, and as archaeological resources, cultural landscapes, structures, and ethnographic resources for MPA management purposes. Ethnographic resources include natural resources and sites with tribal or traditional cultural meaning, value and use.

Ecological network – A set of discrete MPAs within a region that are connected through dispersal of reproductive stages (eggs, larvae, spores, etc.) or movement of juveniles and adults. The effective management of certain marine species may require networks of discrete MPAs encompassing regional collections of local populations linked by dispersal and movement, which may be essential for some local populations to persist. The creation of MPA networks must take into consideration other non-MPA areas that provide similar linkages, which does not necessarily imply additional management measures outside MPAs or the creation of a "super MPA" with boundaries encompassing all MPAs in the network.[9]

Ecosystem – A geographically specified system of organisms, including humans and the environment and the processes that control its dynamics.

Ecosystem approaches to management (or Ecosystem-based management) – A management approach that "looks at all the links among living and nonliving resources, rather than considering single species in isolation." This approach "reflects the relationships among all ecosystem components, including humans and nonhuman species, and the environments in which they live. This system of management considers human activities, their benefits, and their potential impacts within the context of the broader biological and physical environment."[10]

Extractive – Activities that remove or are intended to remove living or nonliving resources from an MPA.

Large Marine Ecosystems – Regions of ocean space encompassing coastal areas from river basins and estuaries out to the seaward boundary and continental shelves and the seaward margins of coastal current systems. They are relatively large regions on the order of 200,000 square kilometers or greater, characterized by distinct bathymetry, hydrography, productivity, and trophically dependent populations.

Lasting – For natural heritage and cultural heritage MPAs, the site's authority must clearly state its intent to provide permanent protection. For sustainable production MPAs, the site must be established with the intent at the time of designation to provide, at a minimum, the duration of protection necessary to achieve the mandated long-term sustainable production objectives for which the site was established.

Local government – A legally established unit of government at a level below state government, including but not limited to county, city, town, or village.

Management [managing] entity or entities – The federal, state, local, or tribal entity or entities with legal authority to designate, promulgate regulations for, and/or manage an MPA. In many cases, authority lies with one entity or program; however, in certain instances, such as the federal/state National

[9] MPA FAC, 2005.

[10] U.S. Commission on Ocean Policy (USCOP). 2004. An Ocean Blueprint for the 21st Century, Washington, D.C.

Estuarine Research Reserve System and state/tribe co-management arrangements, authority is formally shared or split among two or more entities.

Marine environment – Must be: (a) ocean or coastal waters (note: coastal waters may include intertidal areas, bays, or estuaries); (b) an area of the Great Lakes or their connecting waters; (c) an area of lands under ocean or coastal waters or the Great Lakes or their connecting waters; or (d) a combination of the above.

Marine Protected Area – Any area of the marine environment that has been reserved by federal, state, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein. See also Area, Marine environment, Reserved, Lasting, and Protection.

Marine Reserve – A type of MPA where extractive uses are prohibited (also referred to as "no-take" reserve).

National System of MPAs – The group of MPA sites, networks, and systems established and managed by federal, state, tribal, and/or local governments that collectively enhance conservation of the nation's natural and cultural marine heritage and represent its diverse ecosystems and resources. National system MPAs work together at the regional and national levels to achieve common objectives for conserving the nation's important natural and cultural resources.

Natural heritage – The nation's biological communities, habitats, ecosystems, and processes and the ecological services, uses, and values they provide to present and future generations.

[Marine] Natural resource – Any biological or physical component of the marine environment that contributes to the structure, function, goods, or services provided by a marine ecosystem.

Network – A set of discrete MPAs within a region or ecosystem that are connected through complementary purposes and synergistic protections. A network of MPAs could focus on ecosystem processes, certain individual marine species, or cultural resources. For example, an ecological network of MPAs could be connected through dispersal of reproductive stages or movement of juveniles and adults (see "Ecological network").

Precautionary design – Decisions are based on the best information currently available from natural science, social science, customary and local knowledge, and other sources. Where information is limited, decisions should reflect a precautionary approach.

Protection – Must have existing laws or regulations that are designed and applied to afford the site with increased protection for part or all of the natural and submerged cultural resources therein for the purpose of maintaining or enhancing the long-term conservation of these resources, beyond any general protections that apply outside the site.

Region or Regional – An area inclusive of and determined by participating national system sites and systems that is based on common management interests, similar or linked ecological characteristics, and/or other factors that provide a foundation for meaningful coordination.

Reserve area – No extractive uses allowed, except permitted scientific and educational uses; destructive or disruptive activities are limited; other uses and activities may be restricted or zoned; and access is limited, as necessary to meet site management goals.

Reserved – Must be established by and currently subject to federal, state, local, or tribal law or regulation.

Stakeholder – Individuals, groups of individuals, organizations, or political entities interested in and/or affected by the outcome of management decisions. Stakeholders may also be individuals, groups, or other entities that are likely to have an effect on the outcome of management decisions. Members of the public also may be considered stakeholders.

State – See United States.

Stewardship – Careful and responsible management to ensure goals and objectives are being achieved for the benefit of current and future generations.

Sustainable production resources – The nation's renewable living resources and their habitats (including, but not limited to, spawning, mating, and nursery grounds and areas established to minimize bycatch of species) and the social, cultural, and economic values and services they provide to present and future generations.

System – A set of MPAs connected by shared programmatic, administrative, or other organizing principles or purposes. A system of MPAs is not necessarily confined to a specific geographic area such as a region or ecosystem.

Tribe – A federally recognized American Indian or Alaska Native government.

United States – Includes the several states, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, the Commonwealth of the Northern Mariana Islands, and Guam.

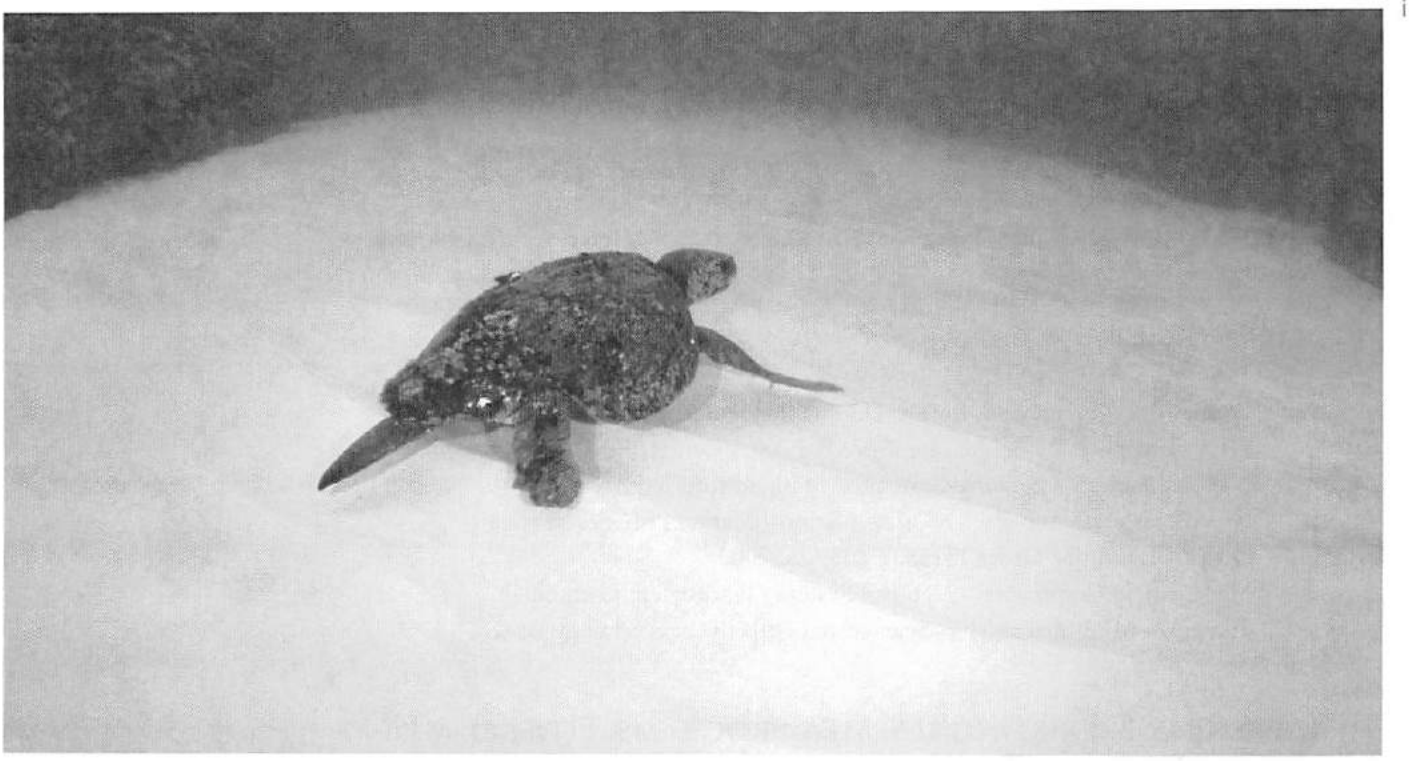
VII. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. Nothing in Executive Order 13158 or this Framework shall be construed as altering existing authorities regarding the establishment of federal MPAs in areas of the marine environment subject to the jurisdiction and control of states, the District of Columbia, Commonwealth of Puerto Rico, the U.S. Virgin Islands, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

2. Neither Executive Order 13158 nor this Framework creates any right or benefit, substantive or procedural, enforceable in law or equity by a party against the United States, its agencies, its officers, or any person.

3. Neither Executive Order 13158 nor this Framework diminishes, affects, or abrogates Indian treaty rights or U.S. trust responsibility to Indian tribes.

4. Federal agencies taking actions pursuant to Executive Order 13158 or under this Framework must act in accordance with international law and with Presidential Proclamation 5928 of December 27, 1988, on the Territorial Sea of the United States of America; Presidential Proclamation 5030 of March 10, 1983, on the Exclusive Economic Zone of the United States of America; and Presidential Proclamation 7219 of September 2, 1999, on the Contiguous Zone of the United States.



VIII. APPENDICES

Appendix A. Acronyms and Abbreviations Used

Acronyms

COP – Commission on Ocean Policy
DOC – Department of Commerce
DOI – Department of the Interior
EPA – Environmental Protection Agency
FOIA – Freedom of Information Act
FMC – Federal Fishery Management Council
FWS – U.S. Fish and Wildlife Service
LME – Large Marine Ecosystem
MLCD – Manele-Hulopoe Marine Life Conservation District
MPA – Marine protected area
MPA FAC – Marine Protected Areas Federal Advisory Committee
NEPA – National Environmental Policy Act
NRCE – National Register Criteria for Evaluation
NRHP – National Register of Historic Places
NERRS – National Estuarine Research Reserve System
NMFS – National Marine Fisheries Service
NOAA – National Oceanic and Atmospheric Administration
NRCE – National Register Criteria for Evaluation
NRHP – National Register of Historic Places
SIMOR – Subcommittee on Integrated Management of Ocean Resources

U.S. – United States of America
USOAP – U.S. Ocean Action Plan (USOAP)
USGS – US Geological Survey
WCPA/IUCN – World Commission on Protected Areas/International Union for Conservation of Nature

Abbreviations

Framework – Framework for Developing the National System of MPAs
MPA Center – National Marine Protected Areas Center
National System – National System of Marine Protected Areas
NOAA Fisheries Service – NOAA's National Marine Fisheries Service
Order – Executive Order 13158 of May 26, 2000
Management Committee – National System Management Committee
Strategy – MPA Stewardship, Science and Effectiveness Strategy

APPENDIX B. EXISTING U.S. MPA PROGRAMS, FEDERAL MPA INITIATIVES, AND TRIBAL AND INTERNATIONAL EFFORTS

The nation's existing suite of MPA sites, programs, authorities, and systems at all levels of government are the fundamental components of the national system. The recognition of and full participation by these federal, state, tribal, and local government programs are critical to the national system's success. Working together, these existing programs and authorities, federal MPA coordination initiatives, and linkages to international MPA initiatives will make important contributions to and receive benefits from the development of an effective national system. This section provides an overview of these major efforts and generally describes their respective roles in the national system.

A. U.S. MPA Programs and Authorities

MPAs in the United States are managed by a number of entities and programs at federal, state, tribal, and local government levels. This section provides a brief summary of these programs and describes the nature of their role in the development of the national system.

Federal and Federal/State MPA Programs

Currently, there are several federal MPA programs and one federal/state partnership MPA program in the United States. Each has one or more specific legal mandates that it is required to fulfill. Many of these programs have established and actively manage systems of MPAs designed to fulfill their responsibilities to the nation. As described below, the federal MPA programs include DOI's National Park System and National Wildlife Refuge System and NOAA's National Marine Sanctuary System, National MPA Center, and National Marine Fisheries Service programs. The National Estuarine Research Reserve System is composed of NOAA/state partnerships.

National Park System: The National Park System is administered by DOI's National Park Service with a mission to conserve the scenery and the natural and historic objects and wildlife

therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations. The National Park System preserves unimpaired natural and cultural resources and values representative of the nation's ocean heritage in superlative natural, historic, and recreation areas in every region. The National Park System currently contains 72 ocean and Great Lakes parks.

National Wildlife Refuge System: The U.S. Fish and Wildlife Service's (FWS) mandate is to provide the federal leadership to conserve, protect, and enhance fish and wildlife and their habitats for the continuing benefit of people. The mission of the National Wildlife Refuge System, a program within the DOI FWS, is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans. There are 177 ocean and Great Lakes refuges.

National Marine Sanctuary System: Under the National Marine Sanctuaries Act, NOAA establishes areas of the marine environment that have special conservation, recreational, ecological, historical, cultural, archaeological, scientific, educational, or aesthetic qualities as national marine sanctuaries to: (A) improve the conservation, understanding, management, and wise and sustainable use of marine resources; (B) enhance public awareness, understanding, and appreciation of the marine environment; and (C) maintain for future generations the habitat and ecological services of the natural assemblage of living resources that inhabit these areas. There are currently 13 sanctuaries and one marine national monument in the national marine sanctuaries system.

National Marine Protected Areas Center (MPA Center): The mission of the MPA Center is to facilitate the effective use of science, technology, training, and information in the planning, management, and evaluation of the nation's system of marine protected areas. The MPA Center is housed within NOAA and coordinates across NOAA programs, as well as with pertinent federal, state, tribal, and local MPA and MPA-support entities. At the federal level, the MPA Center coordinates closely with DOI. The MPA Center's specific national system roles are described in detail in Section V (G) of this document.

National Marine Fisheries Service Programs and Federal Fishery Management Councils (FMC): Under a number of statutory authorities, the National Marine Fisheries Service establishes and manages MPAs to rebuild and maintain sustainable fisheries, conserve and restore healthy marine habitats, and promote the recovery of protected species, including marine mammals and anadromous fish. These sites fall under four major categories: Federal Fisheries Management Zones, Federal Fisheries Habitat Conservation Zones, Federal Threatened and Endangered Species Protected Areas, and Federal Marine Mammal Protected Areas. FMCs have been established for the stewardship of fishery resources through the preparation, monitoring, and revision of fishery management plans. These FMCs enable states, the fishing industry, consumer and environmental organizations, and other interested persons to participate in and advise on the management of marine fisheries and to take into account the social and economic needs of the states. FMC-recommended actions are subject to review and approval by the Secretary of Commerce through a delegation of authority to the National Marine Fisheries Service. The National Marine Fisheries Service is responsible for the promulgation of site-specific regulations to delineate MPA boundaries and establish associated protective measures.

National Estuarine Research Reserve System (NERRS): The mission of the NERRS is to promote stewardship of the nation's estuaries through science and education using a system of protected areas. The NERRS, which is currently made up of 27 sites, is a unique partnership program between NOAA and the coastal states to protect estuarine land and water, which provides essential habitat for wildlife, and offers educational opportunities for students, teachers, and the public. The NERRS sites serve as living laboratories for scientists. With its unique state/federal partnership, the NERRS participation with the national system will require close consultation and coordination with the NOAA Estuarine Reserves Division and state agency or university staff of NERRS sites.

National Monuments: In June 2006, President Bush established the Northwestern Hawaiian Islands Marine National Monument under Presidential Proclamation 8031 (71 FR 36443, June 26, 2006) under the authority of the Antiquities Act (16 U.S.C. 431). This was the nation's first marine national monument. The Monument – renamed the Papahānaumokuākea Marine National Monument in March 2007 to reflect Hawaiian language and culture – is approximately 100 nautical miles wide and extends approximately 1,200 miles from northwest to southeast around the Northwestern Hawaiian Islands. In December 2006, the Secretaries of Commerce and the Interior and the Governor of Hawai'i signed a Memorandum of Agreement to jointly manage federal and state lands and waters within the Monument as Co-Trustees, to collectively conserve and manage Monument natural and cultural resources.

State and Local Government MPA Programs

Each U.S. coastal state also has a variety of MPA programs and authorities, often at both the state and local government levels. State MPA programs can include: Historic Preservation offices; Fish and Wildlife agencies; Coastal Zone Management programs; Fishery Management agencies; Parks and Recreation agencies, and other authorities. MPAs are used by states for a variety of purposes ranging from managing fisheries, recreation, tourism, and other uses to protecting ecological functions, preserving shipwrecks, and maintaining traditional or cultural connections to the marine environment. In addition, local governments within coastal states, such as counties and other municipalities, have programs that establish and manage MPAs for protecting marine species, nursery grounds, shellfish beds, and other important natural and cultural resources. Similar to their federal analogs, some state MPA programs have also developed and continue to manage their existing sites as systems of MPAs.

Given the significant coastal and marine resources under state jurisdiction, the large number of state MPAs – roughly 83 percent of the national total – compared to federal sites, and the potential impacts and benefits to states from MPAs located in federal waters, full state participation in the development of the national system is critical to its success. It is important to note, however, that state and local government participation in the national system is voluntary under the Order. The MPA Center will work closely with states to determine their interest in participating. State government agencies, programs, and authorities that elect to participate in the national system will be full partners and will have an equal voice in decision making to set priorities for collaborative efforts at the regional and national levels.

Tribal MPA Authorities, Programs, and Linkages

Tribal governments have an integral role to play in resource management—legally, culturally and economically. The Order "does not diminish, affect, or abrogate Indian treaty rights or United States trust responsibilities to Indian tribes," and calls on NOAA and DOI to "consult

with...tribes...and other entities to promote coordination of federal, state, territorial, and tribal actions to establish and manage MPAs." Because the federal government has a trust responsibility to all federally recognized tribes, conservation goals and management practices for MPAs should be established through government-to-government consultations.

In addition, several Indian tribes in Western Washington and the Great Lakes have treaty-reserved fishing rights. These tribes share co-management authority and responsibility for marine resources in their usual and customary fishing areas with the federal government and/or states, depending on the specific resource and area identified. Tribes that have sole management authority may choose to establish MPAs as a tool to meet conservation goals for areas where they have management responsibilities. For areas where tribes share co-management authority with the federal government and/or states, any entity wishing to establish MPAs must do so through government-to-government consultations. The MPA Center will work closely with tribes to determine their interest in participating in the national system. Tribal governments that elect to participate in the national system will be full partners and will have an equal voice in decision making to set priorities for collaborative efforts at the regional and national levels.

Numerous opportunities to enhance coordination and collaboration with tribes on issues related to MPAs are possible through the development of the national system. Some of these opportunities could include a range of potential partnerships aimed at the sharing of information; enhancing technical, scientific, and management capacity; and developing conservation strategies for marine resources of mutual concern. The MPA Center and national system partners, many of whom have ongoing relationships with tribes, will consult with tribal governments to determine their interest in participating in the national system and will work with them to develop appropriate mechanisms and protocols.

B. Linkages to Related Federal MPA Initiatives

There are several other significant federal MPA initiatives that are either directly or indirectly linked to the development of the national system. These efforts make important contributions to and can benefit from the development of the national system. This section provides an overview of each of these efforts and further describes their relationship and role in the development of the national system.

MPA Federal Advisory Committee

The MPA FAC is authorized by the Order to provide expert advice and recommendations to DOC and DOI. The MPA FAC is comprised of 30 non-federal members representing diverse perspectives and areas of expertise, including natural and social science, commercial and recreational fishing, tribal and state governments, oil and gas, tourism, environmental organizations, and others. The MPA FAC also includes ten federal ex officio members to provide information and support from entities managing, supporting, or potentially affecting MPAs. The MPA FAC completed its first report in June 2005, which provided recommendations on the goals, objectives, principles, and structure of the national system, and its second report in October 2007, which provided recommendations regarding the

development of the national system. The MPA FAC will continue to advise DOC and DOI on aspects of developing and implementing the national system. Information on MPA FAC members and its work products are posted at http://mpa.gov/mpafac/fac.html.

The Federal Interagency MPA Working Group

The Order directs DOC and DOI to work closely with the other federal agencies to develop the national system. To provide a mechanism for this coordination, the MPA Center established the Federal Interagency MPA Working Group, which includes representatives from the Departments of Commerce, the Interior, Defense, Homeland Security, State, Agriculture, Environmental Protection Agency, National Science Foundation, and the U.S. Agency for International Development. The Federal Interagency MPA Working Group meets several times a year to provide input on policy issues related to national system development, coordinate activities related to the Order, and support the work of the MPA FAC. In addition, members of the Federal Interagency MPA Working Group will serve as members of the National System Management Committee (see Section V (B)).

U.S. Ocean Action Plan

The U.S. Ocean Action Plan (USOAP) outlines a variety of actions for promoting the responsible use and stewardship of ocean and coastal resources for the benefit of all Americans. A Cabinet-level "Committee on Ocean Policy" (COP) was established by Executive Order 13366 (December 17, 2004) to coordinate the activities of executive branch departments and agencies regarding ocean-related matters in an integrated and effective manner to advance the environmental and economic interests of present and future generations of Americans. The President further directs the executive branch agencies to facilitate, as appropriate, coordination and consultation regarding ocean-related matters among federal, state, tribal, and local governments; the private sector; foreign governments; and international organizations. Subcommittees of the COP also have been formed as part of the ocean governance structure described in the USOAP, including the Subcommittee on Integrated Management of Ocean Resources (SIMOR) and the Joint Subcommittee on Ocean Science and Technology. Many of the activities outlined in the USOAP and the subsequent work plans of the COP's subcommittees complement efforts to develop the national system. Similarly, many of the collaborative actions under the national system may offer opportunities to help advance the USOAP. As these efforts proceed, the MPA Center will work closely with SIMOR to evaluate progress and plans for developing the national system in order to ensure coordination and consistency with the USOAP's governance structure and overall approach.

In support of this effort, the USOAP calls on National Parks, National Wildlife Refuges, National Marine Sanctuaries, and National Estuarine Research Reserves to, "coordinate and better integrate the existing network of marine managed areas." Many of these sites overlap or lie adjacent to each other and a history of collaboration between parks, marine sanctuaries, refuges, and reserves provides a model for this expanded network. Although these sites were created under separate agency authorities and statutory mandates, they are united by their proximity and similar science and management priorities. These actions to coordinate and better integrate efforts have been aptly named and are referred to as the "Seamless Network" initiative. The

Seamless Network concept reflects the Administration's emphasis on greater scientific and programmatic coordination between ocean agencies, and complements efforts to implement the MPA Executive Order. In addition, the USOAP calls on the National Park Service to adopt an Ocean Parks Stewardship Action Plan. Both the Seamless Network and Ocean Parks Stewardship Action Plan are described below.

Seamless Network Initiative

The USOAP calls on the four above mentioned MPA systems to work together, "to promote coordination of research, public education, and management activities at neighboring parks, refuges, sanctuaries, and estuarine reserves." Two federal interagency agreements are called for under this effort. The first is a general agreement that enables site-based, regional, and national collaborations among the partner agencies, and is currently under development. The second is a separate cooperative enforcement agreement signed in August 2005 among the National Wildlife Refuge System, National Park Service, National Marine Sanctuary Program, and National Marine Fisheries Service. When implemented, these agreements will ultimately contribute to several important elements of the national system, such as the identification of science and stewardship priorities for enhancing MPA effectiveness through enhanced interagency cooperation and information sharing. Known as the Seamless Network initiative, this effort will provide a coordination mechanism for these MPA systems in the development of the national system and will build on existing collaborative efforts. In many cases these MPAs have ongoing collaborations and the Seamless Network will expand and enhance those relationships. The wider set of eventual national system partners such as other federal programs and state, tribal, and local government MPA sites and systems may benefit from this model. An active dialogue exists and will be maintained between the developing national system and the Seamless Network Initiative efforts in order to ensure that they complement one another.

Ocean Parks Stewardship Action Plan

The USOAP calls for the adoption of an Ocean Parks Strategy by the National Park Service. Key elements of this strategy include: characterizing marine species and habitats; evaluating and monitoring their condition; increasing the scientific understanding of how marine ecosystems function; and developing cooperative science-based fishery management plans between parks and state agencies. This plan was issued in December 2006 and can be viewed at http://www.nps.gov/pub_aff/oceans/Ocean_Park_ActionPlan.pdf. This important effort offers opportunities for collaborative approaches between the National Park Service, the Seamless Network initiative, and the national system to address shared science and management priorities.

C. International MPA Programs and Authorities

In addition to U.S. MPA programs and authorities, there are numerous international MPA efforts and linkages that can contribute to and benefit from the national system. Marine ecosystems and their associated natural resources rarely align with the political boundaries of sovereign countries. Moreover, ecosystems often overlap with adjacent countries and

Table 4. Examples of Existing U.S. MPAs

MPA Name and Location	Name of Managing Entity and Type of Management	MPA Description*
Ashepoo-Combahee-Edisto (ACE) Basin National Estuarine Research Reserve South Carolina	Federal/State Partnership Management: National Oceanic and Atmospheric Administration and South Carolina Department of Natural Resources	ACE Basin is one of the largest undeveloped estuaries on the East Coast. Diverse estuarine wetlands provide an extensive complex of wildlife habitat types; the region contains 91,000 acres of tidal marshes, 26,000 acres of managed impoundments, and 12,000 acres of maritime islands.
Manele-Hulopoe Marine Life Conservation District (MLCD) Hawaii	State Management: Hawaii Department of Land and Natural Resources	The Manele-Hulopoe Marine Life Conservation District (MLCD) is located in the waters offshore of Palawai and Kamao on the southwestern coast of Lanai. Within Manele Bay corals are most abundant along the sides of the bay near the cliffs, where the bottom slopes off quickly to about 40 feet. The middle of the bay is a sand channel. Just outside the western edge of the bay near Pu'u Pehe rock, is "First Cathedrals," a popular SCUBA destination. Hulopo'e Bay has large tidepools at its left point. A shallow reef is just offshore, providing excellent snorkeling opportunities. Pu'u Pehe Cove has clear water and considerable marine life. Coral growth is interspersed with sand patches, and most coral is found away from the narrow beach in about 10 to 15 feet of water.
North Fork, St. Lucie Aquatic Preserve Florida	State Management: Florida Department of Environmental Protection	The North Fork, St. Lucie Aquatic Preserve contains various aquatic habitats such as riverine, blackwater stream, tidal marsh, slough, and floodplain forest communities. The headwaters of the North Fork are composed of freshwater from Ten Mile and Five Mile Creeks. Downstream, brackish conditions support tidal marshes with mangroves, leatherfern, and sawgrass.
Monomoy National Wildlife Refuge Massachusetts	Federal Management: Department of the Interior, U.S. Fish and Wildlife Service	Monomoy is comprised of 7,604 acres of barrier beach, sand dunes, freshwater ponds, and saltwater marshes. Monomoy provides habitat for hundreds of species of resting, feeding, and migratory birds. The refuge supports the largest nesting colony of common terns in the Gulf of Maine and second largest on the Atlantic Seaboard with close to 8,000 nesting pairs in 2001. Monomoy is the largest haul-out site of gray seals on the Atlantic Seaboard as well.

* Only the marine portion of the described areas are considered to be a part of the MPA; the terrestrial components, while a part of the larger management unit, are not considered to be part of the MPA.

some natural resources may move back and forth between distant countries. In recognition of these important international connections, section 4(a) of the Order calls on federal agencies to identify opportunities to improve "linkages with, and technical assistance to, international [MPA] programs."

The United States shares a number of common resources with both neighboring and distant countries. For instance, migratory species (e.g., whales, sea turtles, pelagic fishes, and some birds) rely on the marine and coastal waters of multiple countries during various stages of their life. There are also a number of international law and policy issues regarding our underwater cultural heritage. For example, certain cultural resources that rest in the seabed of U.S. MPAs, such as sunken military craft and associated contents that have not been abandoned, retain their protected sovereign status and permanent right, title, and interest may be vested in the flag country.

Enhancing existing or establishing new linkages among systems in other countries can mutually benefit the United States and international MPAs through coordination of efforts, information and capacity sharing, and technical assistance. Along with sharing common resources, the United States also shares the consequences of potentially harmful activities occurring outside of U.S. waters, including pollution, over-harvesting of marine resources, and degradation of associated habitats. By coordinating with international MPA programs, the United States can minimize the harmful impacts of external activities and maximize the benefits of MPAs.

For U.S. MPAs, important international linkages include, but are not limited to, those relating to Canada, Mexico, and Russia, as well as those amongst multiple countries in the Arctic, Pacific Islands, and Caribbean. Several legal mechanisms, such as bi-lateral and multi-lateral agreements and treaties, exist to address many of these resource management issues. For example, the International Maritime Organization's Particularly Sensitive Sea Areas program and the Wider Caribbean Protocol Concerning Specially Protected Areas and Wildlife are two MPA-related international efforts of significance. The MPA Center and/or its federal partners are actively involved in a number of such efforts, including the Commission on Environmental Cooperation's development of a North American MPA Network (NAMPAN) and the exchange of training and technical assistance with other nations. The national system can facilitate a dialogue and develop collaborative efforts between the United States and other countries to complement and support the work of MPA programs.

Appendix C. Programmatic Environmental Assessment

Lead Agency:
Department of Commerce, National Oceanic and Atmospheric Administration, National Ocean Service

Cooperating Agency:
Department of the Interior, National Park Service

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Purpose and Need for this Programmatic Environmental Assessment

The purpose of this Programmatic Environmental Assessment (PEA) is to fulfill the requirements of Executive Order (EO) 13158, which are to develop, design and build a National System of Marine Protected Areas (MPAs).

Executive Order 13158 on MPAs

Executive Order 13158 on Marine Protected Areas (2000) calls on the Department of Commerce and the Department of the Interior (DOI), in consultation with other federal agencies and stakeholders, to develop a national system of marine protected areas (MPAs) to enhance the conservation of the nation's natural and cultural marine heritage. The Executive Order created the National Marine Protected Areas Center (MPA Center) within the National Oceanic and Atmospheric Administration (NOAA) to coordinate this effort. The mission of the MPA Center is to facilitate the effective use of science, technology, training, and information in the planning, management, and evaluation of the nation's system of marine protected areas.

The National System of MPAs

Currently, nearly 1,700 marine areas have been identified in the United States (U.S.). These areas are managed under the authority of hundreds of federal, state and territorial (state), tribal, and local laws and regulations. Familiar examples of MPAs include national and state marine sanctuaries, parks, wildlife refuges, and some fishery management areas. This patchwork of protected areas is an important component of the nation's marine conservation mission, but would be greatly enhanced by the improved coordination and integration across sites and MPA programs that a national system will provide.

The National System of MPAs (national system) will be built collaboratively by existing MPA sites and systems through partnerships at the ecosystem, regional, and national levels. The national system will focus on supporting shared priorities for enhancing coordination and stewardship of partner MPA sites and systems in order to improve effectiveness. The national system may ultimately include some new areas vital to the conservation of significant natural and cultural marine resources. These may be identified by national system partners through regional planning or other processes, and will be based on the best available science and stakeholder involvement.

Any new MPAs would need to be designated through an existing federal, state, tribal, or local authority, as the Executive Order provides no authority to create new MPAs.

Need for Action

The Executive Order calls on the MPA Center to develop a Framework for the national system (Framework). The first draft was published for public comment in September 2006, and was

revised after due consideration of comments and recommendations received. A second draft was published for an additional round of public comment during March-May 2008, and again has been revised with consideration of input received. This PEA has also been revised based on comments received during the 2006-2008 comment period.

The purpose of the Framework is to serve as a "road map" for developing the national system that will specify a common vision, and common goals, objectives, and criteria for the national system, as well as the process for partnerships among federal, state, tribal, and local government agencies and stakeholders to develop it. While the Executive Order and the Framework document are non-regulatory, the MPA Center developed this PEA to provide federal and state agencies, tribes, and other stakeholders with the best available information on the potential impacts of the Framework document during its two public comment periods.

Scope of this Analysis

This PEA considers the programmatic environmental consequences of proposing the Framework. As previously described, the Framework itself only lays out a strategic process to achieve a national system of MPAs. The Framework itself does not propose any new MPAs, nor does it create or recommend any new authority under which they may be designated.

The consideration of designating additional MPAs or expanding existing MPAs will occur solely at the discretion of the state, federal, tribal, and local agencies which have the authority to develop different MPAs to fulfill their own missions and implement the national system. As such, any potential site-specific environmental, economic, and social impacts cannot be meaningfully analyzed until these agencies consider individual MPA proposals under their own authorities. Therefore, the potential effects of any detailed regional, state, or local MPA alternatives proposed by a federal agency under this Framework would be further analyzed under NEPA at the time they are proposed, including in environmental assessments tiered from this PEA as appropriate.

Description of Proposed Action and Alternatives

Alternatives Considered, but Rejected

In considering alternatives for proposing the Framework, the following three were selected as constituting a reasonable range of alternatives for this PEA: "Alternative A: Take No Action," "Alternative B: Propose the Draft Framework for Developing the National System of Marine Protected Areas" and "Alternative C: Propose the Framework for the National System of Marine Protected Areas of the United States of America." Numerous other possible alternatives were, however, considered by NOAA for analysis, but ultimately rejected. For example, a wide range of alternatives would have resulted from all the possible permutations of changes in the Framework's approach to meeting the various requirements of the MPA Executive Order. Several factors led to the determination that the approach of analyzing a wide range of many potential alternatives should be rejected.

First, the Framework lays out a series of processes for U.S. MPA programs, managing entities, authorities, and other stakeholders around the country to work together to determine eligible MPAs and the most appropriate, specific approaches for developing the national system. Because the Framework is focused on managing entity and stakeholder processes to determine specific approaches and actions, the environmental consequences of these permutations cannot be predicted to be significantly different than Alternative C.

Second, and most important, the processes outlined in the elements of the Framework are based on input received from consultations with and recommendations from MPA stakeholders around the country, including the MPA Federal Advisory Committee, as required by the Executive Order. Creating a range of alternatives that are either independent of these consultations or consider only some of the recommendations received would not meet the requirements of the Executive Order.

Therefore, having considered additional alternatives for proposing the Framework for the national system, NOAA has determined that the three alternatives described below constitute a reasonable and practical range of alternatives for assessing the anticipated environmental consequences of fulfilling the need to develop the Framework.

Alternative A: Take No Action

Under this alternative, NOAA would not propose a Framework as required by the MPA Executive Order. The MPA Executive Order would stand alone without any further detail of the processes necessary for developing the national system. There would be no description of processes for identifying and including existing MPAs in the national system, working with MPA programs to collaboratively identify and address common stewardship needs, or identifying place-based gaps in protection.

Alternative B: Propose the Draft Framework for Developing the National System of Marine Protected Areas

NOAA proposed the first draft of the Framework published in September 2006. As noted by the MPA Federal Advisory Committee and many public comments, this draft document lacked a strategic focus to describe how the national system would target priority conservation objectives; lacked design and implementation principles to guide development of the system; and provided only a minimal description of how the national system would be coordinated and conduct gap analyses on a regional basis.

Alternative C: Propose the Framework for the National System of Marine Protected Areas of the United States of America (Preferred)

This alternative would fulfill the directive of the MPA Executive Order to develop a Framework. The Framework provides guidance for developing the national system and therein implementing key elements of the Executive Order. The full descriptions of the proposed national system elements and associated processes are contained in the Framework and summarized here as:

- Summary of authority for developing the Framework and national system.
- Overview of key U.S. MPA programs and related initiatives.
- Key definitions for developing the national system.
- Goals and objectives for the national system.
- Sequence and steps for implementing the Framework.
- Process for identifying, nominating, and including MPAs in the national system.

- Options for building collaborative efforts to enhance stewardship and regional coordination of MPAs.
- Process for identifying conservation gaps in the national system.
- Maintenance of the official List of National System MPAs.
- Process for implementing the "avoid harm" provision.
- Options for evaluating effectiveness of the national system.
- Mechanisms for tracking and reporting national system progress and priorities.

Description of Affected Environment

The geographic extent of the Framework and the nation's existing MPAs that it aims to support span the United States' territorial waters and Exclusive Economic Zone waters of the Pacific Ocean, including the Bering Sea; Atlantic Ocean, including the Gulf of Mexico and Caribbean Sea; Arctic Ocean; and the Great Lakes. This environment encompasses the entire range of the nation's marine ecosystems, including their natural heritage, cultural heritage, and sustainable production resources and functions, goods, and services. The following are general descriptions of five valued environmental components that may be affected programmatically by the Framework. More detailed descriptions of specific affected environments will be given in future tiered analyses based on future consideration of MPAs which may occur under the authority of individual state, federal, tribal, and local agencies.

Natural Heritage Resources

The nation's existing MPAs, whether managed by federal, state, tribal, or an inter-governmental collaboration of entities help to conserve and restore the wealth of U.S. natural marine environments, including but not limited to, kelp forests, warm and cold water coral reefs, rocky intertidal areas, offshore banks and seamounts, estuarine areas, the Great Lakes waters, deep sea vents, and sand and mud flats. In these marine environments, MPAs play an important role in protecting the significant natural biological communities, endangered and threatened species, habitats, ecosystems, processes, and the ecological services, uses, and values they provide to this and future generations. These various components of the nation's marine environment are critical to maintaining the integrity and health of marine and coastal ecosystems. Oftentimes managing for one of these elements means protecting the others. For example, to effectively manage endangered or threatened species, the habitat they rely upon must also be protected.

Sustainable Production Resources

Existing U.S. MPAs are also designed and established with the intent to help ensure the sustainability of the renewable living resources and their habitats, including, but not limited to, spawning, mating, and nursery grounds, and areas established to minimize bycatch of species that are important to the nation's economy and the livelihoods and subsistence needs of its citizens. MPAs can help to sustain commercial and recreational fisheries by controlling fishing effort, protecting critical stages in the life history of fishery species, conserving genetic diversity of exploited species, reducing secondary impacts of fishing on essential fish habitat and other species, and ensuring against fisheries collapse (Murray et al. 1999; NRC, 2001). MPAs may allow site-

specific regulation of selected species, selected gear types, or fishing methods. Certain MPAs or zones within MPAs may be fishery reserves that protect all or nearly all species from fishing. Many studies indicate that abundance and size of target species increase in marine protected areas that limit extractive use (Dugan and Davis, 1993; Crowder et al., 2000; Halpern, 2003).

Cultural Heritage Resources

The nation's existing MPAs preserve and protect important cultural resources. These cultural resources reflect the nation's maritime history and traditional cultural connections to the sea, as well as the uses and values they provide to this and future generations. Examples include archeological sites that contain significant cultural artifacts; sunken historic ships, aircraft, or other vessels; and areas important to specific cultures. Protecting cultural resources in MPAs reduces the chance that artifacts will be removed or damaged from modern-day commercial or recreational activities. Unlike many biological communities that have some level of resilience to recover from degradation, once cultural sites are damaged, the information and value of these non-renewable resources may be lost forever. MPAs are an important tool for conserving cultural resources by monitoring the environment for change and stabilizing deteriorating structures. MPAs also encourage actions to find, preserve, and interpret the associated artifacts that may otherwise be inaccessible to the public. By protecting marine sites that are important to the nation's diverse cultures, existing U.S. MPAs preserve a part of history for future generations.

Current Governmental Management Structure

The past several decades have witnessed a dramatic increase in the use of MPAs as a conservation and management tool to protect the nation's most important natural and cultural marine resources and areas. Over 90 percent of U.S. MPAs were established after 1970 (National MPA Center Marine Protected Area Inventory, 2008). The growth in MPAs has not only resulted in increased protections to certain natural and cultural marine resources, but also brought about a significant number of new MPA programs and authorities at all levels of government, each with their own requirements, levels of protection, and associated terms.

These programs and the MPA sites that they manage are components of a complex sociopolitical landscape that features diverse institutions, governance structures, and processes. They include, for example, federal programs such as the National Marine Sanctuaries and National Parks; tribal MPA authorities and co-management arrangements with states; state programs such as fish and wildlife, coastal zone management, and historic preservation; and other governmental approaches to MPAs.

Each of these programs has its own mandate it is required to fulfill. These mandates often overlap in both geographic scope and the conservation purposes for which they were established. In addition, while many existing MPA programs comprise a system of MPAs, there are a limited number of mechanisms in place to coordinate MPA efforts across ecosystem, regional, national, or international levels among MPA programs and levels of government. This is not to say that no such coordination is happening. In fact, there are a number of good examples of existing MPA sites and programs in a common geography working together, which serve as excellent models. However, there is no overarching MPA framework for facilitating and promoting such coordination across levels of government and at an ecosystem or regional scale around the nation. Similarly, the effectiveness of the existing

suite of MPAs in contributing to the long-term sustainability of important resources, habitats and ecosystems, and the services and values they provide, is largely yet to be determined.

Social, Economic and Cultural Benefits

MPAs in the United States and its territories provide social, economic, and cultural benefits by protecting resources and environments. These benefits come in many forms, both tangible and intangible and direct and indirect. Direct, tangible benefits may include supporting the socioeconomic well-being of communities tied to our nation's fisheries by enhancing stocks for sustainable harvest and recreational opportunities. These communities provide significant inputs to the U.S. economy and many have long and storied historical connections to the marine environment. MPAs that ensure sustainable production have the intangible benefit of promoting cultural continuity and identity, which is instrumental in maintaining healthy communities.

By protecting key resources and habitats, MPAs can also promote greater economic returns from tourism through enhanced visitor experiences. These direct economic benefits are inextricably linked with the intangible quality of visitor experience. Good water quality, abundant living resources, and scenic, aesthetic ocean environments attract visitors to coastal areas around the globe. These visitors engage in diverse activities that include non-extractive uses of the marine environment, such as scuba diving, snorkeling, wildlife watching, boating, and surfing, as well as extractive uses such as fishing. All of these activities rely on healthy marine environments. U.S. MPAs help ensure that marine environments will continue to draw the visitors that have become critical to many coastal economies. For example, in Monroe County, Florida, location of the Florida Keys National Marine Sanctuary and other marine-related parks and wildlife refuges, the estimated total tourist contribution to the economy (1995-1996) is over 60 percent (English et al., 1996).

MPAs also provide direct, tangible benefits by providing opportunities for research and education. Certain MPAs feature academic and applied monitoring of short-term events and long-term environmental trends, as well as biomedical research (Salm et al, 2000).

MPAs can provide hands-on experience and outdoor laboratories for bringing classroom studies to life. MPA educational programs have the potential to promote public awareness of the importance of marine ecosystems and their many benefits.

MPAs also protect historic connections to our nation's heritage that are critical to social and cultural continuity. People and communities are connected to marine resources, including both natural and cultural features. These connections are affirmed through direct practice, oral and written narrative, and everyday discourse. MPAs can enhance cultural connectivity to places by ensuring their protection for future generations, allowing traditional cultural practices, promoting awareness of our nation's heritage, and acknowledging existence and bequest values inherent in marine resources.

Environmental Consequences of Proposed Action and Alternatives

As previously noted, the Framework only provides a strategic process for establishing the National System of MPAs, rather than proposing any specific action itself. Therefore, at a programmatic level, the environmental consequences of the proposed action and alternatives are negligible.

The specific environmental, economic, social, and cumulative impacts of proposed new or expanded MPAs later proposed by a federal agency under this Framework would be further analyzed under NEPA at the time they are proposed, including in environmental assessments tiered from this PEA as appropriate.

Alternative A: Take No Action

Environmental Impacts

Taking no action would result in no predictable direct or indirect environmental impacts, either positive or negative. The 'Take No Action' alternative would not allow for the realization of the benefits expected from the proposed Framework's greater integration and coordination of conservation efforts among existing authorities and sites.

Socioeconomic Impacts

Taking no action would result in no predictable direct socioeconomic impacts, either positive or negative. The 'Take No Action' alternative would not allow for the realization of the benefits expected from the proposed Framework's greater integration and coordination of conservation efforts among existing authorities and sites.

Alternative B: Propose the Draft Framework for Developing the National System of Marine Protected Areas

Environmental Impacts

The Draft Framework would not be expected to result in adverse impacts on the environment. The Draft Framework proposed to coordinate the activities among federal, state, tribal, and local MPA sites and systems to reduce administrative costs and promote efficiency and the effective use of existing management infrastructure for marine resource protection. However, because of the lack of a strategic focus within this alternative, the expected beneficial long-term environmental impacts and improved quality of the nation's marine resources would not be as great as those under Alternative C.

Socioeconomic Impacts

Similar to Alternative C, the proposed Draft Framework would not be expected to result in adverse socioeconomic impacts. However, because of the lack of focused design and implementation principles, and a clear vision for regional coordination, there is less potential, relative to Alternative C, for long-term positive socioeconomic impacts from promoting integration among government authorities, enhancing knowledge and awareness of MPAs as a tool of ecosystem-based management, and supporting processes for incorporating stakeholders and communities in ecosystem management.

Alternative C: Propose the Framework for the National System of Marine Protected Areas of the United States of America (Preferred)

Environmental Impacts

The Framework is not expected to result in adverse impacts on the environment. The Framework proposes to coordinate the activities among federal, state, tribal, and local MPA

sites and systems to reduce administrative costs and promote efficiency and the effective use of existing management infrastructure for marine resource protection.

Implementation of the Framework provides opportunities for shared information, resources, scientific expertise, and lessons learned for individual MPAs. The proposed Framework mostly involves a number of low or no impact activities that will positively affect the stewardship and management of individual MPAs and ultimately lead to beneficial long-term environmental impacts and improved quality of the nation's marine resources relative to Alternative A. Additional environmental analysis of future activities, as required under the National Environmental Policy Act (NEPA) and other acts and executive orders, would be prepared as necessary by the relevant entity or entities taking any such actions.

The Framework also promotes activities over time to identify gaps in protection of important marine resources and subsequent area-based conservation priorities that would be needed to manage and protect those resources. This component of the Framework is similarly comprised of a number of low or no impact activities that ultimately could lead to beneficial long-term environmental impacts relative to Alternative A. In order to realize these benefits, however, actions to implement new or increased protections would be needed. Activities taken by individual entities in the future, such as changes in MPA regulations or the establishment of new MPAs as a result of the implementation of the proposed Framework will undergo separate NEPA analysis by entities taking such actions as required and appropriate.

Socioeconomic Impacts

The proposed Framework is not expected to result in adverse socioeconomic impacts. The Framework provides guidance for the implementation of the national system. It does not establish new MPAs or directly affect the stewardship and management, including human uses and values, associated with existing MPAs. The socioeconomic impacts of, for example, the long-term cumulative effects of developing the national system will be assessed as necessary under NEPA and other federal mandates for specific actions taken by those entities or programs with the authority to establish and manage MPAs and/or alter MPA regulations.

In proposing to integrate the activities and conservation objectives among the various authorities, the Framework will have its most immediate effects upon the communication and organizational structures across the various levels of MPA governance. As a result, there is great potential, relative to Alternative A, for long-term positive socioeconomic impacts from promoting integration among government authorities, enhancing knowledge and awareness of MPAs as a tool of ecosystem-based management, and supporting processes for incorporating stakeholders and communities in ecosystem management.

Furthermore, the implementation of the national system as proposed by the Framework will have long-term positive impacts, relative to Alternative A, for participating MPA sites, their associated marine resources, and the wider ecosystems of which they are a part. The national system will seek to integrate natural heritage, cultural heritage, and sustainable production objectives in order to minimize adverse socioeconomic impacts and promote comprehensive MPA conservation and management. It will focus on improving the effectiveness of MPA design, management, and evaluation through dissemination and use of the best available science and tools.

Additional socioeconomic analysis as required under NEPA and other acts and executive orders, would be prepared by the relevant entity or entities as necessary for future specific actions.

Cumulative Effects

The Council on Environmental Quality regulations (40 CFR 1508.8) define cumulative effects as "impacts on the environment that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such actions." At a programmatic level, the integration and coordination of federal, state, local and tribal agencies to improve MPA conservation and management are anticipated to have no significant adverse cumulative impact to environmental or socioeconomic resources. Relative to Alternative A, the proposed action has beneficial cumulative impacts to the resources that the National System of MPAs will protect. At a programmatic level, socioeconomic impacts are anticipated to be negligible (see above). Future tiered analyses on specific alternatives and resources will occur as entities consider future actions which fall under this Framework.

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Finding of No Significant Impact

The Council on Environmental Quality (CEQ) Regulations state that the determination

of significance using an analysis of effects requires examination of both context and intensity, and lists ten criteria for intensity (40 CFR 1508.27). In addition, the National Oceanic and Atmospheric Administration Administrative Order (NAO) 216-6 Section 6.01b. 1 - 11 provides eleven criteria, including the same ten as the CEQ Regulations and one additional, for determining whether the impacts of a proposed action are significant. Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others.

1. Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?
NOAA expects the implementation of the proposed Framework will result in a number of activities that will positively affect the stewardship and management of individual MPAs and ultimately lead to beneficial long-term environmental impacts and improved quality of the nation's marine resources. The specific environmental, economic, social, and cumulative impacts of any proposed new or expanded MPAs later proposed by a federal agency under this Framework would be further analyzed as required by NEPA at the time they are proposed.

2. Can the proposed action reasonably be expected to significantly affect public health or safety?
No negative impacts to public health or safety are associated with these activities.

3. Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?
The Framework for the national system will not have significant adverse impacts on the areas listed above. It will provide a mechanism for coordination among existing marine protected areas, including those that protect significant natural and cultural marine resources. The Framework is expected to enhance the effectiveness of participating MPAs in contributing to national conservation objectives, such as the protection of spawning and nursery areas or the conservation of resources listed on the National Register of Historic Places.

4. Are the proposed action's effects on the quality of the human environment likely to be highly controversial?
While individual MPAs are often a contentious subject, the effects of the proposed Framework on the human environment are not likely to be controversial. The actions and activities associated with the various components of the Framework focus on promoting coordination, collaboration, opportunities for stakeholder input, and enhancing scientific understanding in support of the effective use of MPAs. These activities largely have little or no impact on the human environment, but are envisioned to positively affect the stewardship and management of individual MPAs and ultimately lead to beneficial long-term impacts on the human environment and improved quality of the nation's marine resources.

5. Are the proposed action's effects on the human environment likely to be highly uncertain or involve unique or unknown risks?
The Framework's effects are not expected to involve unique or unknown risks. Work will focus on enhancing coordination; sharing best management practices, technologies and science; and establishing conservation partnerships across all levels of government and with stakeholders.

6. Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

The Framework does not establish a precedent for future actions with significant effects. Regional conservation gap analyses will identify ecologically and culturally significant areas that may require additional protection. However, the Framework does not have any authority to establish a new MPA or another type of protection for these areas. Any additional protection would be provided under existing federal, state, local or tribal laws, and would be subject to the required review processes under the respective authority.

7. Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?

The activities associated with the proposed Framework largely have little or no impact on the human environment, but are envisioned to positively affect the stewardship and management of individual MPAs and ultimately lead to beneficial long-term impacts on the human environment and improved quality of the nation's marine resources. By providing the first national geospatial database of MPAs across all levels of government, the national system will provide an opportunity to better understand the cumulative effectiveness of existing MPAs and to identify opportunities for collaboration. The cumulative effects of specific MPAs that may be proposed under the Framework will be analyzed in the NEPA analysis prepared for that proposed action.

8. Can the proposed action reasonably be expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?

The Framework will not adversely affect any of the aforementioned areas. It will benefit significant scientific, cultural and historical resources and areas listed in or eligible for listing in the National Register of Historic Places, as the protection of these areas is included in the goals and objectives of the national system.

9. Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?

The Framework will not adversely affect endangered or threatened species or their critical habitat. The conservation of critical habitat for threatened and endangered species is an objective of the national system. The national system will provide tools for analyzing and mapping existing protected areas that contribute to the conservation of threatened and endangered species, as well as gaps in the protection of critical habitat where new MPAs may be needed.

10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?

The Framework will not threaten any violation of Federal, state, or local law or requirements for environmental protection.

11. Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?
The Framework will not result in the introduction or spread of any nonindigenous species. By providing a mechanism for regional coordination, it will help MPAs develop shared strategies and partnerships to prevent and contain the impacts of nonindigenous species.

List of Preparers and Agencies Consulted
Department of Commerce, National Oceanic and Atmospheric Administration
Department of the Interior, National Park Service

APPENDIX D. EXECUTIVE ORDER 13158

Executive Order 13158

Presidential Documents

Executive Order 13158 of May 26, 2000

Marine Protected Areas

By the authority vested in me as President by the Constitution and the laws of the United States of America and in furtherance of the purposes of the National Marine Sanctuaries Act (16 U.S.C. 1431 et seq.), National Wildlife Refuge System Administration Act of 1966 (16 U.S.C. 668dd-ee), National Park Service Organic Act (16 U.S.C. 1 et seq.), National Historic Preservation Act (16 U.S.C. 470 et seq.), Wilderness Act (16 U.S.C. 1131 et seq.), Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1801 et seq.), Coastal Zone Management Act (16 U.S.C. 1451 et seq.), Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.), Marine Mammal Protection Act (16 U.S.C. 1362 et seq.), Clean Water Act of 1977 (33 U.S.C. 1251 et seq.), National Environmental Policy Act, as amended (42 U.S.C. 4321 et seq.), Outer Continental Shelf Lands Act (42 U.S.C. 1331 et seq.), and other pertinent statutes, it is ordered as follows:

Section 1. Purpose. This Executive Order will help protect the significant natural and cultural resources within the marine environment for the benefit of present and future generations by strengthening and expanding the Nation's system of marine protected areas (MPAs). An expanded and strengthened comprehensive system of marine protected areas throughout the marine environment would enhance the conservation of our Nation's natural and cultural marine heritage and the ecologically and economically sustainable use of the marine environment for future generations. To this end, the purpose of this order is to, consistent with domestic and international law: (a) strengthen the management, protection, and conservation of existing marine protected areas and establish new or expanded MPAs; (b) develop a scientifically based, comprehensive national system of MPAs representing diverse U.S. marine ecosystems, and the Nation's natural and cultural resources; and (c) avoid causing harm to MPAs through federally conducted, approved, or funded activities.

Sec. 2. Definitions. For the purposes of this order:

a. "Marine protected area" means any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein.

b. "Marine environment" means those areas of coastal and ocean waters, the Great Lakes and their connecting waters, and submerged lands thereunder, over which the United States exercises jurisdiction, consistent with international law.

c. The term "United States" includes the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands.

Sec. 3. MPA Establishment, Protection, and Management. Each Federal agency whose authorities provide for the establishment or management of MPAs shall take appropriate actions to enhance or expand protection of existing MPAs and establish or recommend, as appropriate, new MPAs. Agencies implementing this section shall consult with the agencies identified in subsection 4(a) of this order, consistent with existing requirements.

Sec. 4. National System of MPAs. (a) To the extent permitted by law and subject to the availability of appropriations, the Department of Commerce and the Department of the Interior, in consultation with the Department of Defense, the Department of State, the United States Agency for International Development, the Department of Transportation, the Environmental Protection Agency, the National Science Foundation, and other pertinent Federal agencies shall develop a national system of MPAs. They shall coordinate and share information, tools, and strategies, and provide guidance to enable and encourage the use of the following in the exercise of each agency's respective authorities to further enhance and expand protection of existing MPAs and to establish or recommend new MPAs, as appropriate:

1. science-based identification and prioritization of natural and cultural resources for additional protection;

2. integrated assessments of ecological linkages among MPAs, including ecological reserves in which consumptive uses of resources are prohibited, to provide synergistic benefits;

3. a biological assessment of the minimum area where consumptive uses would be prohibited that is necessary to preserve representative habitats in different geographic areas of the marine environment;

4. an assessment of threats and gaps in levels of protection currently afforded to natural and cultural resources, as appropriate;

5. practical, science-based criteria and protocols for monitoring and evaluating the effectiveness of MPAs;

6. identification of emerging threats and user conflicts affecting MPAs and appropriate,

practical, and equitable management solutions, including effective enforcement strategies, to eliminate or reduce such threats and conflicts;

7. assessment of the economic effects of the preferred management solutions; and

8. identification of opportunities to improve linkages with, and technical assistance to, international marine protected area programs.

b. In carrying out the requirements of section 4 of this order, the Department of Commerce and the Department of the Interior shall consult with those States that contain portions of the marine environment, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands, tribes, Regional Fishery Management Councils, and other entities, as appropriate, to promote coordination of Federal, State, territorial, and tribal actions to establish and manage MPAs.

c. In carrying out the requirements of this section, the Department of Commerce and the Department of the Interior shall seek the expert advice and recommendations of non-Federal scientists, resource managers, and other interested persons and organizations through a Marine Protected Areas Federal Advisory Committee. The Committee shall be established by the Department of Commerce.

d. The Secretary of Commerce and the Secretary of the Interior shall establish and jointly manage a website for information on MPAs and Federal agency reports required by this order. They shall also publish and maintain a list of MPAs that meet the definition of MPA for the purposes of this order.

e. The Department of Commerce's National Oceanic and Atmospheric Administration shall establish a Marine Protected Area Center to carry out, in cooperation with the Department of the Interior, the requirements of subsection 4(a) of this order, coordinate the website established pursuant to subsection 4(d) of this order, and partner with governmental and nongovernmental entities to conduct necessary research, analysis, and exploration. The goal of the MPA Center shall be, in cooperation with the Department of the Interior, to develop a framework for a national system of MPAs, and to provide Federal, State, territorial, tribal, and local governments with the information, technologies, and strategies to support the system. This national system framework and the work of the MPA Center is intended to support, not interfere with, agencies' independent exercise of their own existing authorities.

f. To better protect beaches, coasts, and the marine environment from pollution, the Environmental Protection Agency (EPA), relying upon existing Clean Water Act authorities, shall expeditiously propose new science-based regulations, as necessary, to ensure appropriate levels of protection for the marine environment. Such regulations may include the identification of areas that warrant additional pollution protections and the enhancement of marine water quality standards. The EPA shall consult with the Federal agencies identified in subsection 4(a) of this order, States, territories, tribes, and the public in the development of such new regulations.

Sec. 5. Agency Responsibilities. Each Federal agency whose actions affect the natural or cultural resources that are protected by an MPA shall identify such actions. To the extent permitted by law and to the maximum extent practicable, each Federal agency, in taking such actions, shall avoid harm to the natural and cultural resources that are protected by an MPA. In implementing this section, each Federal agency shall refer to the MPAs identified under subsection 4(d) of this order.

Sec. 6. Accountability. Each Federal agency that is required to take actions under this order shall prepare and make public annually a concise description of actions taken by it in the previous year to implement the order, including a description of written comments by any person or organization stating that the agency has not complied with this order and a response to such comments by the agency.

Sec. 7. International Law. Federal agencies taking actions pursuant to this Executive Order must act in accordance with international law and with Presidential Proclamation 5928 of December 27, 1988, on the Territorial Sea of the United States of America, Presidential Proclamation 5030 of March 10, 1983, on the Exclusive Economic Zone of the United States of America, and Presidential Proclamation 7219 of September 2, 1999, on the Contiguous Zone of the United States.

Sec. 8. General.

a. Nothing in this order shall be construed as altering existing authorities regarding the establishment of Federal MPAs in areas of the marine environment subject to the jurisdiction and control of States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands of the United States, American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and Indian tribes.

b. This order does not diminish, affect, or abrogate Indian treaty rights or United States trust responsibilities to Indian tribes.

c. This order does not create any right or benefit, substantive or procedural, enforceable in law or equity by a party against the United States, its agencies, its officers, or any person.

(Presidential Sig.) William J. Clinton
THE WHITE HOUSE,
May 26, 2000.

APPENDIX E. MPA FAC AND EX OFFICIO MEMBERS, AND THE FEDERAL MPA INTERAGENCY WORKING GROUP

CURRENT MEMBERS OF THE MPA FEDERAL ADVISORY COMMITTEE

CHAIR

Dr. Mark Hixon, Professor, Department of Zoology, Oregon State University

VICE-CHAIR

Mr. Robert Zales, II, Owner, Bob Zales Charters

MEMBERS

Ms. Lori Arguelles, President and CEO, National Marine Sanctuaries Foundation

Mr. Charles D. Beeker, Director, Office of Underwater Science, School of Health, Physical Education and Recreation, Indiana University

Mr. David Benton, Benton & Associates

Dr. Daniel Bromley, Professor, Department of Agricultural and Applied Economics, University of Wisconsin

Dr. Anthony Chatwin, Marine Conservation Planner, The Nature Conservancy

Mr. Rick Gaffney, Pacific Boats and Yachts

Dr. Steve Gaines, Professor, Ecology, Evolution and Marine Biology, University of California, Santa Barbara

Ms. Ellen Goethel, Co-Owner, "Ellen Diane" / Ocean Educator

Dr. Dennis Heinemann, Senior Scientist, The Ocean Conservancy

Mr. George Lapointe, Commissioner, Maine Department of Marine Resources

Mr. Victor T. Mastone, Director and Chief Archeologist, Massachusetts Board of Underwater Archaeological Resources

Ms. Melissa Miller-Henson, Program Manager, California Marine Life Protection Act Initiative

Dr. Russell Moll, Director, California Sea Grant College Program, University of California, San Diego

Dr. Elliott Norse, President, Marine Conservation Biology Institute

Dr. John Ogden, Director and Professor, Florida Institute of Oceanography, University of South Florida

Mr. Terry O'Halloran, Hawaii Superferry, Tourism Business Solutions, LLC

Mr. Alvin D. Osterback, Port Director, City of Unalaska/Port of Dutch Harbor

Dr. Walter Pereyra, Chairman, Arctic Storm Management Group, Inc.

Mr. Eugenio Piñeiro-Soler, Chairman, Caribbean Fishery Management Council

Dr. Robert S. Pomeroy, Sea Grant Fisheries Specialist, Connecticut Sea Grant Office, University of Connecticut at Avery Point

Mr. Gilbert Radonski, Fisheries Consultant, Former President, Sport Fishing Institute

Mr. James P. Ray, President, Oceanic Environmental Solutions, LLC

Captain Philip G. Renaud, USN (Ret.), Executive Director, Living Oceans Foundation

Mr. Jesús C. Ruiz, President, California Divers

Mr. Bruce A. Tackett, Manager, Legislative and Regulatory Issues, ExxonMobil Biomedical Sciences, Inc.

Mr. David H. Wallace, Owner, Wallace and Associates

Mr. Robert Wargo, President, North American Submarine Cable Association, Marine Liaison Manager, AT&T

EX OFFICIO FEDERAL REPRESENTATIVES

Department of Commerce
Ms. Laura Furgione, Assistant Administrator for Program Planning and Integration, NOAA

Department of the Interior
Dr. Kaush Arha, Deputy Assistant Secretary for Fish and Wildlife and Parks, U.S. Department of the Interior

Designee: Mr. Randal Bowman, Office of the Assistant Secretary, Fish and Wildlife and Parks, U.S. Department of the Interior

Department of Defense/Navy
Mr. Donald Schregardus, Deputy Assistant Secretary of the Navy (Environment)

Designee: Capt. Robin Brake, Director, Marine Science, Office of the Assistant Secretary of the Navy (Installations and Environment)

Department of Defense/Army Corps
Mr. Joseph Wilson, U.S. Army Corps of Engineers, South Atlantic Division

Department of Homeland Security
Rear Admiral Wayne Justice, Assistant Commandant for Response, U.S. Coast Guard

Designee: LCDR Chris Barrows, Commandant (CG-3RPL-4), Chief, Fisheries and Marine Protected Species Law Enforcement, US Coast Guard

U.S. Agency for International Development
Ms. Jacqueline Schafer, Deputy Assistant Administrator, Bureau for Economic Growth, Agriculture and Trade

Designee: Dr. Barbara Best, Coastal Resources and Policy Advisor, Office of Natural Resources Management, Bureau for Economic Growth, Agriculture and Trade

National Science Foundation
Ms. Roxanne Nikolaus, Ocean Sciences Division

Department of Agriculture
Mr. Merlin Bartz, Office of the Under Secretary for Conservation, Natural Resources and the Environment

Department of State
Ms. Margaret F. Hayes, Director of the Office of Oceans Affairs, Bureau of Oceans and International Environmental and Scientific Affairs

Environmental Protection Agency
Dr. Brian Melzian, Oceanographer/Project Officer, U.S. Environmental Protection Agency, National Health and Environmental Effects Research Laboratory, Atlantic Ecology Division

Designated Federal Official
Ms. Lauren Wenzel, NOAA Ocean Service, National Marine Protected Area Center

PAST MEMBERS OF THE MPA FAC

MEMBERS

Dr. Tundi Agardy, Executive Director, Sound Seas

Mr. Robert Bendick, Jr., Vice President, Southeast Division, The Nature Conservancy

Dr. Michael Cruickshank, President, Marine Minerals Technology Center Associates

Ms. Carol Dinkins, Partner, Vinson and Elkins Attorneys at Law

Dr. Rodney Fujita, Senior Scientist, Environmental Defense

Dr. Delores Garza, Professor, School of Fisheries and Ocean Sciences, University of Alaska

Mr. Eric Gilman, Marine Ecology and Fisheries Specialist, Blue Ocean Institute

Dr. John Halsey, State Archeologist, Michigan Historical Center, Michigan Department of History, Arts and Libraries

Dr. Bonnie McCay, Professor, Department of Human Ecology, Rutgers University

Mr. Melvin Moon, Jr., Director, Quileute Natural Resources Department

Mr. Robert Moran, Washington Representative, American Petroleum Institute

Dr. Steven Murray, Dean, College of Natural Sciences and Mathematics and Professor of Biological Science, California State University at Fullerton

Mr. Michael Nussman, President and CEO, American Sportfishing Association

Mr. Lelei Peau, Deputy Director, Department of Commerce of American Samoa

Mr. R. Max Peterson, Former Executive Vice President, International Association of Fish and Wildlife Agencies

Ms. Barbara Stevenson, Sellers Representative, Portland Fish Pier

Dr. Daniel Suman, Associate Professor, University of Miami

Mr. Thomas Thompson, Executive Vice President, International Council of Cruise Lines

Ms. H. Kay Williams, Member, Gulf of Mexico Fishery Management Council

Mr. Jim Woods, Sustainable Resources, Makah Fisheries Management

EX OFFICIO MEMBERS

Department of Commerce

Ms. Mary M. Glackin, Deputy Under Secretary for Oceans and Atmosphere, NOAA

Dr. Paul Doremus, Acting Assistant Administrator, Program Planning and Integration, NOAA

Department of the Interior

Ms. Kameran Onley, Assistant Deputy Secretary, Office of the Deputy Secretary, U.S. Department of the Interior

Department of Defense/Navy
Designee: Mr. Thomas A. Egeland, Director, Environmental Planning and Conservation Policy, Office of the Assistant Secretary of the Navy (Installations and Environment)

Department of Homeland Security
Designee: LT Jeff Pearson, Deputy Chief, Marine Protected Species, Commandant (CG-3RPL-4), U.S. Coast Guard

INTERAGENCY MARINE PROTECTED AREAS WORKING GROUP

Department of Commerce/NOAA
Mr. Joseph Uravitch (Chair), Director, National Marine Protected Areas Center

Dr. Mimi D'Iorio, Geographic Information System and Database Manager, National Marine Protected Areas Center

Ms. Rondi Robison, Conservation Planner, National Marine Protected Areas Center

Ms. Kara Schwenke, Communications Coordinator, National Marine Protected Areas Center

Dr. Charles Wahle, Senior Scientist, National Marine Protected Areas Center

Ms. Lauren Wenzel, Federal Agency Coordinator, National Marine Protected Areas Center

Ms. Heather Sagar, NOAA National Marine Fisheries Service

Ms. Laurie McGilvray, Director, Estuarine Reserves Division (National Estuarine Research Reserves)

Mr. Brad Barr, Senior Policy Advisor, National Marine Sanctuaries Program

Mr. Mitchell Tartt, National Marine Sanctuaries Program

Department of Defense
Capt. Robin Brake, Director, Marine Science, Office of the Assistant Secretary of the Navy (Installations and Environment)

Mr. Thomas A. Egeland, Director, Environmental Planning and Conservation Policy, Office of the Assistant Secretary of the Navy (Installations and Environment)

Ms. Elizabeth Phelps, Marine Scientist, Chief of Naval Operations, Operational Environmental Readiness and Planning

Ms. Lynn R. Martin, U.S. Army Corps of Engineers, Institute for Water Resources

Mr. Joseph Wilson, U.S. Army Corps of Engineers, South Atlantic Division

Environmental Protection Agency
Dr. Brian Melzian, U.S. Environmental Protection Agency, National Health and Environmental Effects Research laboratory, Atlantic Ecology Division

Department of Homeland Security
LCDR Chris Barrows, U.S. Coast Guard, Chief, Fisheries and Marine Protected Species Law Enforcement, U.S. Coast Guard Headquarters (CG-3RPL-4)

LCDR Chris German, U.S. Coast Guard, US Coast Guard Liaison, NOAA, Office for Law Enforcement

Department of the Interior
Mr. Randal Bowman, Office of the Assistant Secretary, Parks and Fish and Wildlife, U.S. Department of the Interior

Ms. Elizabeth Burkhard, Marine Biologist, Minerals Management Service

Mr. Cliff McCreedy, Marine Management Specialist, Natural Resource Stewardship and Science, National Park Service

Mr. Andrew G. Gude, Program Specialist, Refuge Marine Programs, U.S. Fish and Wildlife Service

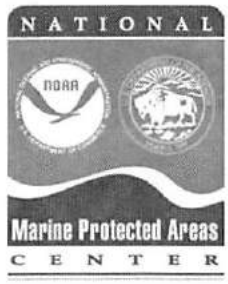
National Science Foundation
Ms. Roxanne Nikolaus, Ocean Sciences Division

Department of State
Ms. Margaret F. Hayes, Director of the Office of Oceans Affairs, Bureau of Oceans and International Environmental and Scientific Affairs

Dr. Winnie Lau, AAAS Science and Technology Fellow/Marine Science Officer, Office of Oceans Affairs, Bureau of Oceans and International Environmental and Scientific Affairs

Dr. Justin Grubich, Marine Science Officer, Office of Ocean Affairs, Bureau of Oceans and International Environmental and Scientific Affairs

U.S. Agency for International Development
Dr. Barbara Best, Coastal Resources and Policy Advisor, Office of Natural Resources Management, Bureau for Economic Growth, Agriculture and Trade



FRAMEWORK FOR THE NATIONAL SYSTEM OF
MARINE PROTECTED AREAS
OF THE UNITED STATES OF AMERICA

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