UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

Monterey Bay National Marine Sanctuary
299 Foam Street
Monterey, California 93940

April 15, 2008

Dear Sanctuary Advisory Council Members,

As you recall from my presentation at the February 15, 2008 meeting of the Sanctuary Advisory Council (SAC), the National Oceanic and Atmospheric Administration's (NOAA) Office of National Marine Sanctuaries (ONMS) has decided to move forward with a process to propose marine protected areas (MPAs) in federal waters of the Monterey Bay National Marine Sanctuary (MBNMS or Sanctuary). This letter provides additional information and rationale on this decision and clarifies the role of the National Marine Sanctuaries Act (NMSA) in managing the national marine sanctuaries from an ecosystem-based approach. I look forward to your continued participation, support, and advice on this important issue.

1.0 Background

The decision to move forward with a process to propose MPAs in the Sanctuary is based on advice from the regional community, input from partner agencies, and deliberations over the last five years by the MBNMS marine protected areas working group. If action is taken by the ONMS to establish MPAs in federal waters of the Sanctuary, the primary purpose for this action is to protect biodiversity and protect natural habitats, populations, biological communities and ecological processes (in this document collectively referred to as protection of ecosystem components). This action would not be taken for the purpose of managing any single human activity or impact, but rather to protect biodiversity, and protect components of the ecosystem within the Sanctuary using ecosystem-based approaches to management. Under the NMSA, the ONMS's responsibility for natural resource protection and ecosystem-based management is among the most comprehensive of all federal programs. Sections 1.1 and 1.2 provide further context on the ONMS's goal of marine resource protection and why MPAs are considered an essential ecosystem-based tool to address specific objectives within the broad goal of resource protection.

1.1 Statutory context of proposed action

The NMSA, of which the primary purpose is resource protection, is unique in that it allows management actions focused on the protection and conservation of the full spectrum of biological diversity and can serve as an important complement to tools focused on single species management, such as the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), the Endangered Species Act (ESA), and the Marine Mammal Protection Act (MMPA). NOAA's National Marine Fisheries Service (NOAA Fisheries) manages individual species of economic importance under MSFCMA, the nation's primary law regulating fishing in federal waters. The MSFCMA requires regional fishery management councils to develop fishery management plans (FMP) with goals of optimum sustainable yield to manage targeted populations. The MSFCMA also requires management of essential fish habitat and habitat areas of particular concern, but management actions must be focused on specific spatial and temporal attributes that support populations of species managed as part of an FMP. The ESA provides for

broad protection of species listed as threatened or endangered, including recovery plans and the designation of critical habitat. The MMPA provides protections to marine mammals by prohibiting take of marine mammals and having a goal that individual marine mammal species or stocks remain at, or above their optimum sustainable population level. "Take" under the MMPA is defined as "harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect.

While there are thousands of documented species in the Sanctuary, and many that remain unknown, only a small percentage is protected under the MSFCMA, ESA, and MMPA. Among the findings, purposes, and policies of the NMSA is the finding "while the need to control the effects of particular activities has led to enactment of resource-specific legislation, these laws cannot in all cases provide a coordinated and comprehensive approach to the conservation and management of special areas of the marine environment." The NMSA is unique in that it allows for coordinated and comprehensive management actions focused on the protection and conservation of the full spectrum of biological diversity at a sanctuary rather than single species populations, which is the focus of other resource specific legislation. Congress found that national marine sanctuaries are areas of the marine environment that have special national significance and provides they be managed "to maintain the natural biological communities.....and to protect, restore, and enhance natural habitats, populations, and ecological processes."

Another provision of the NMSA (Section 301(b)(6)) addresses the tension between resource protection and human uses and/or activities of sanctuary resources, and states a purpose of the NMSA is "to facilitate to the extent compatible with the primary objective of resource protection, all public and private uses of the resources of these marine areas not prohibited pursuant to other authorities." This provision of the NMSA identifies when facilitating public and private uses of sanctuary resources, resource protection is the primary objective and therefore takes precedence. Human uses should be facilitated only when compatible with resource protection. The MBNMS facilitates some form of compatible human use in vast portions of the Sanctuary. Such uses are sometimes facilitated under relevant legislation, such as the NMSA and the MSFCMA. Only small nearshore portions within MPAs implemented by the state of California prohibit all, or most forms of extractive activity. The purpose of facilitating human uses compatible with the primary objective of resource protection will be fully evaluated with the process to consider establishing MPAs in federal waters of the MBNMS.

In managing for biodiversity protection and ecosystem component protection, the authorities and protection measures afforded by all relevant statutes will be brought to bear in addressing the issues identified in sections 2.1, 2.2, and 2.3 below. Furthermore, given the distinctions made above among relevant governing statutes, it is reasonable to anticipate that the ONMS would advocate for higher levels of protection for certain areas of the Sanctuary than would be applied throughout the whole of the Sanctuary. By pursuing a process to consider further protections, the MBNMS is not characterizing the current management of habitats, economically important species, listed species, or marine mammals in the Sanctuary as inadequate under their respective regimes. Instead, the existing management actions designed for individual species or stocks are not designed to fully meet the ecosystem component protection and biodiversity protection goals of the MBNMS under the NMSA.

1.2 The ecosystem and MPA effects on components of the ecosystem

The Monterey Bay National Marine Sanctuary is within the California Current Large Marine Ecosystem (CCLME), which has been subject to major alterations due to a combination of climatic and oceanographic variation and human activities (Chavez *et al.* 2003). The CCLME is subject to natural fluctuations in environmental conditions, typified by alternating climate regimes that differ in temperature, circulation, nutrient availability, and productivity over multiple time scales. For example, anchovy and sardine stock abundances have responded to these regime shifts over the last two millennia by cycling in or out of phase with environmental conditions (Finney *et al.* 2002). Typically, when anchovies are abundant, sardines are less abundant, and vice versa. During the downswing of one of these stocks, an anthropogenic or natural impact, such as overfishing or global warming, may alter their response to natural regime shifts and slow their recovery rate (Chavez *et al.* 2003, Palumbi *et al.* 2008). Ed Ricketts in 1946 suggested that this might have occurred to the sardine stocks that were heavily exploited in the Monterey Bay (Rodger 2002).

The ONMS's ability to accurately evaluate the scale and consequences of change in the state of the Sanctuary's natural resources is often challenged by an inadequate knowledge of historic baselines to compare with present conditions. A number of global studies have recorded substantial decreases in abundances of large consumers, such as whales, turtles, sharks and pelagic fish (Jackson et al. 2001, Myers and Worm 2003). The following historic baselines of the ecosystem off the California central coast region concur with this global phenomenon. For example, Jean Francois de la Perouse described in 1792 what are believed to be the abundance of gray whales and stated, "it is impossible to describe the number of whales….. they blowed every half minute within a pistol shot from our frigate." Blue, right, gray and humpback whales were subsequently hunted to the edge of extinction. Despite full protection by the International Whaling Commission in 1947 for the California gray whale, their current numbers only represent 28-56% of their original historical abundance for the east Pacific population (Alter *et al.* 2007).

Shallow rocky reefs off the California coast often exist in alternative states comprised of kelp forests or urchin barrens (Tegner and Dayton 2000), depending on many environmental variables, but chiefly on the presence of urchin predators, such as spiny lobsters and sheephead in southern California or sea otter populations in central California. Hunted for their fur in the 1800s, sea otters were nearly extirpated before laws protecting otters were enacted. Sea otters have the potential for regulating kelp forest communities and the number and diversity of fishes resident in these nearshore communities (Estes and Palmisano 1974). As early as 1850, trophic cascades brought about by sea otter exploitation led to population explosions of two herbivorous invertebrates, abalone and sea urchins. Had it not been for the thriving abalone fishery led by the Chinese in the area, more serious impacts on kelp forest and the associated ecosystem might have been experienced. Although the size or location of any proposed MPAs in federal waters of the Sanctuary would be inappropriate for protection and restoration of whale or sea otter populations, these examples serve to demonstrate how the natural state of certain species within the CCLME and the Sanctuary have shifted to a fraction of their historical abundances. Marine fauna have undergone substantial population changes due to climatic influences and human activities. These examples support the need for long-term datasets to distinguish natural ecosystem variation inherent in the CCLME from anthropogenic forcing.

The basic diversity of marine life and the patterns and processes controlling distribution and abundance of marine organisms in the Sanctuary are still not well understood, especially in offshore waters and deeper habitats. At the same time, new technologies (e.g., geographic information systems or GIS) and conceptual advances (e.g., theoretical models) in ecosystem-based management allow the ONMS to implement research and management approaches that seek to reveal a more complete understanding of ecosystem components of the Sanctuary's deepwater communities.

Protecting biodiversity and ecosystem components is central to the implementation of ecosystem-based management, an evolving approach that stresses management of the Sanctuary in context of its ecosystem, including all habitats and species populations, biological communities, and all human activities. Both ecosystem-based management and MPAs offer an integrated approach to marine resource management (NRC 2001, MPA FAC 2006). Numerous advisory panels, such as the U.S. Commission on Ocean Policy and the Pew Oceans Commission as well as many marine scientists, believe that management of marine resources in U.S. waters would be most effective if implemented explicitly from an ecosystem perspective (NOAA 2005; Francis *et al.* 2007). The goal of ecosystem-based management is to achieve healthy and resilient ecosystems so that they can provide services humans need and want, such as water and air purification, seafood, recreation, and spiritual connections (MPA FAC 2006). MPAs promote an ecosystem-based approach to managing and understanding marine resources by protecting geographical areas, including resident organisms and their biophysical environment (Lubchenco *et al.* 2003).

MPA effects on ecosystem components range from habitat and population level responses to community level responses. For example, in areas less impacted by bottom-contact gear, particularly trawl gear, benthic habitats were topographically and structurally more complex, providing increased shelter for juvenile fish and reducing their vulnerability to predation (Kaiser *et al.* 2002). Engel and Kvitek (1998) compared highly trawled areas to lightly trawled areas in the Sanctuary and found lightly trawled areas to contain more heterogeneous sediments, more detritus, and higher abundances of opportunistic species.

In a global study by Halpern (2003) of 89 no-take MPAs, the increased protection inside these particular MPAs yielded, on average, increases in species number, size, and diversity. Improvements in size and age structure of fish populations may improve reproductive capacity, for older fish may produce larger, healthier, and more fit larvae (Berkeley *et al.* 2004a). A broad spectrum of age classes may also buffer a population against long periods of recruitment failure and unfavorable conditions induced by natural or anthropogenic sources (Berkeley *et al.* 2004b). These improvements in habitat and population variables have been shown to provide benefits to economically important species (Murawski *et al.* 2000).

At the community scale within the Sanctuary, natural refugia from human activities had higher abundances of large rockfishes (*Sebastes* spp.) than areas utilized by humans (Yoklavich *et al.* 2000). Shifts in community composition may disrupt direct and indirect ecological processes inherent in food webs and alter community trophic interactions and energy flow. A few studies of MPAs have shown to reverse these trends inside their boundaries by increasing predator abundances and restoring their top-down role in trophic cascades (e.g., Shears and Babcock

2003), and by increasing species richness and functional diversity (Micheli and Halpern 2005). Food web structures are complex and their influence on ecosystem states even more complex. A study of coral reef interactions inside a large marine reserve revealed increased levels of grazing by herbivorous fishes despite increases in predator abundances, which in turn reduced algal cover and increased live coral cover (Mumby *et al.* 2006).

At the ecosystem scale, MPAs have higher biodiversity, which plays a role in ecosystem productivity and stability. Worm *et al.* (2006) conducted a global comparison of regional biodiversity and argued that ecosystems with higher regional species richness appeared more stable, showing lower rates of extinction of economically important fishes and invertebrates over time. The same study reviewed how increased biodiversity in no-take MPAs and fishery-based MPAs were associated with large increases in productivity among economically important species.

Therefore, MPAs are considered an effective ecosystem-based tool for protecting biodiversity and ecosystem components. In addition, MPAs may also contribute to human uses, such as ecotourism and bolstering depleted stocks. Benefits of MPAs in the federal portions of the Sanctuary are most likely to be detected inside the boundaries of the MPA over many years to decades, particularly for sedentary species. Benefits beyond the MPA boundaries will be much harder to detect, but could include spillover of adults (McClanahan and Mangi 2000; Gell and Roberts 2003) and larval dispersal into adjacent areas (Murawski *et al.* 2000). It is important to note that even well-managed MPAs will require continued conservation efforts beyond their boundaries to be effective at promoting biodiversity and conserving ecosystem components (Murray *et al.* 1999).

2.0 Management Objectives for MPAs in Federal Waters of the MBNMS

Marine zones, such as MPAs that offer protections complementing those currently afforded to the Sanctuary as a whole, are tools of spatial management. Marine zones are not a new endeavor for the ONMS or the MBNMS. In fact, the MBNMS has used zoning since the Sanctuary was designated in 1992. Currently, the MBNMS has zones where:

- Certain human activities, otherwise prohibited throughout the Sanctuary, are allowed (such as motorized personal watercraft, harbor dredge disposal, or jade collection);
- Certain human activities are specifically prohibited (such as shark chumming or low over-flights by airplanes).

Through restricting or redirecting potentially harmful or disruptive human activities, these marine zones have improved management and protection of the Sanctuary's ecosystem components. There are three principal management objectives for moving forward with MPAs as additional marine zones in the federal waters of the Sanctuary:

1. Preservation of unique and rare areas in their natural state for the benefit of future generations;
2. Preservation of areas where natural ecosystem components are maintained and/or restored;

3. Designation of research areas to differentiate between natural variation versus human impacts to ecological processes and components.

Supporting information and reasoning for each of these management objectives is detailed below.

2.1. Preservation of unique and rare areas in their natural state for the benefit of future generations

In section 301(a)(4)(C) of the NMSA, Congress finds that the National Marine Sanctuary System will "maintain for future generations the habitat, and ecological services, of the natural assemblages of living resources that inhabit these areas." There are certain areas of the Sanctuary environment with extraordinary features or attributes, such as unique habitats, biological diversity, or sensitivity, warranting a higher level of protection than currently provided by MBNMS regulations and other authorities. These areas of inherent or intrinsic value, due solely to their unique and/or exceptional qualities, may be considered analogous to land areas that are cherished and protected solely for their superlative beauty and untamed wildlife. There are similar wildlife areas in the Sanctuary, teeming with mysterious and stunning life, such as deep sea coral and sponge communities (NOAA 2008) or chemosynthetic biological communities that are vulnerable to human activities and deserve special protections. The concept of protecting "special places" within the Sanctuary of intrinsic value received strong support during the public comment for the Joint Management Plan Review (approximately 50% of comments), as well as comments received when considering the decision to pursue the action of establishing MPAs to manage resources in the federal portions of the Sanctuary (> 95% of comments).

By providing additional protections to areas of intrinsic value, the MBNMS can provide defense against unforeseen impacts and threats from technological advances in marine activities. Changes in a wide variety of marine technologies such as desalination, energy development, or aquaculture may result in unintentional deviations from how the activity had been previously conducted and potentially negatively affect natural resources of the Sanctuary. In many cases, although these technological changes occur quickly, it can take many years to decades for their impacts to be fully understood. The ONMS therefore, can proactively steward special places within the Sanctuary and seek to ensure they are protected for the public now and in the future.

2.2. Preservation of areas where natural ecosystem components are maintained and/or restored

Section 301(b)(3) of NMSA guides the ONMS "to maintain the natural biological communities in the national marine sanctuaries", and "to protect, and, where appropriate, restore and enhance natural habitats, populations, and ecological process." In an effort to achieve this goal, current MBNMS regulations protect Sanctuary resources and attributes from a variety of human activities that can have adverse impacts on the ecosystem. Examples include regulatory prohibitions on oil and gas development, resource extraction, discharge of harmful materials, and seafloor alterations.

To provide for additional protection of the natural components of the ecosystem, other human activities could be restricted or prohibited within any federal waters MPAs designated in the

Sanctuary. Activities that may require further regulation in federal waters include installation of cables, construction of offshore wave energy facilities, commercial and recreational extraction, extractive research, offshore aquaculture, and other types of bottom-contact activities. The effects of most of these activities are currently not well defined, with the exception of fishing. Fishing is one of the most studied human activities of the marine environment with a wide variety of data and sources analyzing its effect on components of marine ecosystems.

The ONMS does not regulate fishing in the Sanctuary and does not consider the establishment of MPAs for MBNMS objectives as a tool for fisheries management. However, any potential MPAs implemented by the MBNMS and existing or future zones designated by fisheries management agencies (hereafter referred to as fishery-based MPAs) may complement each other by contributing to the objectives of ecosystem conservation and sustainable production, respectively. The fishery-based MPAs implemented by the Pacific Fishery Management Council (PFMC) within the Sanctuary are rebuilding overfished populations (Rockfish Closed Areas, RCA) and protecting essential fish habitat (EFH: bottom trawl closed areas within the Sanctuary and bottom contact closed areas over Davidson Seamount). The RCAs provide seasonal protection to groundfish assemblages of "weak and strong stocks" by prohibiting the take of overfished species (weak stocks) that co-occur with healthy species (strong stocks). Recent stock assessments show notable improvement to the status of the overfished stocks, likely due to the RCAs and conservative total allowable catch (TAC) limits for the west coast groundfish fishery. The fishery-based MPAs thus contribute, in part, to the objective of "restoring ecosystem components" by rebuilding overfished stocks. However, the focus of these particular fishery-based MPAs is to rebuild individual stocks and will presumably be discontinued when stocks have been rebuilt (timeline: 2 – 80 years). The performance of designated EFH areas is currently being evaluated. For example, the MBNMS has partnered with Dr. James Lindholm to evaluate the recovery trajectory of a non-trawled area (EFH), compared to a trawled area (J. de Marignac, personal communication).

Fishing activities have altered marine resources and components of the ecosystem globally (NRC 2006) and within the Sanctuary (Yoklavich 2000; Levin *et al.* 2006). Examples of general effects include alterations to population abundances, size and age structure of fishes and invertebrate species, habitats, and species diversity. The dramatic decline of some rockfish species (*Sebastes* spp.) and the lengthy projected periods to rebuild to target levels are sufficient evidence that components of the groundfish community and habitats have been strongly impacted by fishing activity (Ralston 2002). Furthermore, based on two decades of bottom trawl surveys of the California Current, Levin *et al.* (2006) found evidence for broad-scale changes in community composition of groundfishes.

How these changes to groundfish populations and community composition ultimately affect the community interactions of the Sanctuary is thus far unknown. However, studies of temperate communities, both in central California and other regions, show that removal of predators can have cascading impacts to lower trophic levels. As alluded to earlier, the structure of kelp forest communities along the west coast from Alaska to southern California is strongly influenced by the relative abundance of predators (e.g., killer whales, sea otters, lobsters, sheephead) and prey (e.g., sea urchin, abalone) (Estes and Palmisano 1974, Estes *et al.* 1998, Steneck *et al.* 2002, Halpern *et al.* 2006). Other predator-prey examples from the North Atlantic and Baltic Sea

demonstrate how the demise of a predatory fish has led to substantial increases in the abundance of its prey (Worm and Meyers, 2003; Zabel *et al.* 2003). When community interactions are included in a model for design of no-take MPAs for west coast rockfish, two alternative community states are predicted as a consequence of initial densities of predator and prey fish species: one where the overfished rockfish predators dominate and one where the prey dominates (Baskett *et al.* 2006).

Declines in functional species or groups, such as the demise of key predators and herbivores, may also represent a loss of ecological redundancy, reducing ecosystem resilience and rendering the ecosystem vulnerable to additional anthropogenic threats or climatic change (Palumbi *et al.* 2008). Coral reef communities in Jamaica, for example, shifted from predominantly coral cover to algal cover due to serial loss of functional herbivores. Fishing had removed predatory and herbivorous fishes, and once a disease wiped out the remaining principal herbivore (the long-spined sea urchin), the reef community shifted to one dominated by fleshy algae. Nutrient input from sedimentation and sewage further contributes to the persistence of algal dominated reefs (Hughes *et al.* 1999). Recovery from alternative ecosystem states can be delayed by complex and often indirect interactions among species and the environment (Peterson *et al.* 2003).

On the west coast, the PFMC's groundfish FMP establishes a goal of reducing exploited populations to 40% of their unfished size (Ralston 2002). With few exceptions, the direct and indirect effects of removing this quantity of biomass from the ecosystem are poorly understood at an ecosystem level. The initial recovery of some overfished stocks on the west coast and the absence of trophic cascades as a consequence of their removal would suggest that fishing activities have not irreversibly perturbed the ecosystem. However, even though local data are lacking, ecological principles coupled with theoretical models and empirical studies from other regions would strongly advocate for using a precautionary approach. Risk-averse approaches are essential when uncertainty is high and the costs of error may produce irreversible damage. A precautionary approach is central to ecosystem-based tenets (Francis *et al.* 2007) and it is also applied by the PFMC and NOAA Fisheries, who utilize a precautionary approach in promoting sustainable fisheries, particularly when data are poor or lacking for managing economically important species. Because data are limited on the ecosystem-level effects of fishing and other human activities, this approach would dictate establishing areas where human activities are minimized, as a means to hedge against scientific and management uncertainty. These areas would help maintain and restore ecosystem components, and serve as research areas to study and better distinguish natural variation from anthropogenic impacts.

Setting aside certain areas of the Sanctuary as MPAs would also prepare the MBNMS for future management challenges. By establishing MPAs as areas with additional protections, the MBNMS can provide security against cumulative impacts, and unforeseen human and environmental threats by maintaining intact ecosystem components that are better able to recover, resist and reverse natural and human disturbances (Palumbi *et al.* 2008). The importance of resilient ecosystem components is one purpose of the NMSA, which states "develop and implement coordinated plans for the protection and management of [national marine sanctuaries] with…interests concerned with the continuing health and resilience of these marine areas."

2.3 Designation of research areas to differentiate between natural variation versus human impacts to ecological processes and components

Section 301(b)(5) of the NMSA addresses the importance of research by stating "support, promote, and coordinate scientific research on, and long-term monitoring of, the resources of these marine areas." Developing an understanding of the interactions and interdependence of living marine resources in a natural environment is key to effective management. As with the protection of any natural resource, information on the status and natural variability of resource components, species, and interactions is essential for the informed management of an area as extensive as the Sanctuary. In order to adequately differentiate between anthropogenic and natural changes and to further determine how those changes might affect other components of the ecosystem, a baseline set of ecosystem measurements should be established and monitored over subsequent years. As these data are gathered and analyzed, scientists and managers can determine with greater confidence how much variability is natural in a system and how much may be the result of anthropogenic influence. With a better understanding of the factors that influence ecosystem components, managers can support both improved protection of the resource and a more rapid and appropriate response to natural and/or human-induced perturbations.

Control areas, places where extractive or disruptive anthropogenic activities are minimized, are critical for the MBNMS in order to determine the responses of key resources to human influence. By comparing changes in key resources in a control area to other areas of the Sanctuary, MBNMS management would have better information to address the needs of research, protection, and constituent use of the resources.

The research conducted in MPAs could be done in partnership with, or individually by, other managing agencies (e.g., NOAA Fisheries, PFMC, and the State of California), academic institutions, the fishing community, and conservation groups. The type of questions that can be addressed by establishing MPAs for research purposes include, but are not limited to, the following:

- What variability is inherent in the natural ecosystem components and what changes may be the result of human influence?
- What are the effects of extractive activities on ecosystem components?
- How would benthic communities change in response to a further reduction in human activity?
- What are the recovery trajectories in disturbed habitats?
- Where along the continuum of community structure does the protected area fall compared to unprotected or heavily used areas?
- What is the functional role of deep-sea biogenic habitats, such as deepwater corals, sponges, and chemosynthetic biological communities in regulating community structure?

In addition, the Marine Life Protection Act was intended, in part, to help the State of California understand the nearshore marine environment by providing the opportunity to study areas that are not directly impacted by human activities. Having similar research areas in federal waters, where results can be compared to those found in state waters, is not only critical to effective management of the Sanctuary, but is also key to effective ecosystem-based management.

2.4 Other considerations

The MBNMS recently evaluated the number and type of MPAs currently located within the boundaries of the Sanctuary to determine their role in addressing MPA objectives 2.1 thru 2.3. The state-implemented MPAs meet all three objectives, but only for the nearshore environment. The fishery-based MPAs (EFH and RCA), in part, meet objectives 2.2 and 2.3 for components of deepwater communities. Thus, fishery-based MPAs are complementary, but not sufficient in meeting the MBNMS objectives for MPAs in federal waters of the Sanctuary. The fishery-based MPAs protect some economically important species and their associated habitats, but do not adequately protect other non-economically important species or habitats. Nor are the protections permanent or year-round. In addition, fishery-based MPAs cannot restrict other potentially harmful human activities, such as construction of energy farms (wind or wave generated), unless they impact managed fishery species or fishing activities themselves. The target of any MPA that may be implemented on behalf of the ONMS is to protect biodiversity and ecosystem components, which is distinct from the targets for fishery-based MPAs. Additional measures that may be complementary to the fishery-based MPAs are required to address these differences among management approaches.

Additions to existing fishery-based MPAs may be an option to achieve multiple, yet separate, objectives of the MSFCMA and NMSA. For example, there may be merit in considering a few select areas for long-term protection of spawning biomass, age structure, and community structure for some of the more vulnerable habitats and species. These options would be considered as part of an open, transparent, and inclusive process with MBNMS partners, stakeholders, and constituent groups.

3.0 Conclusion

The natural resources of the Sanctuary and the environmental services they provide to the United States are unique, nationally treasured, and internationally recognized. However, certain human and natural impacts to the Sanctuary ecosystem have either become more severe or more apparent since the designation of the Sanctuary in 1992. MPAs are a promising tool for reducing and reversing some of these impacts within discrete areas of the Sanctuary. Current protections either do not cover offshore habitats in federal waters (state MPAs) or only provide limited protection based on target species or activities (EFH and RCAs).

The ONMS's responsibility to manage and protect special marine areas of the nation's public domain is clearly defined in the NMSA. Given this responsibility, coupled with ecosystem-based management principles, the ONMS determined it is appropriate to consider setting aside some areas in representative habitats of the Sanctuary where human impacts can be minimized and the natural ecosystem components of these areas may be restored and maintained. Considering establishment of these areas is compatible with ONMS's ecosystem-based approach to the management of NOAA trust resources and is responsive to public appeals for increased protection.

As such, the ONMS is initiating a process to propose designating MPAs in the federal waters of the Sanctuary, with goals of preserving unique and rare areas in their natural state for the benefit of future generations, preserving areas where natural ecosystem components are maintained and/or may recover, and serving as research areas to differentiate between natural variation

versus human impacts to ecological processes and components. There are many approaches ONMS can take to meeting these goals, and no determination has been made regarding the authority under which any new MPAs would be implemented. This decision will be an integral part to the process of establishing MPAs in the Sanctuary and will be made in close consultation with NOAA Fisheries, the PFMC, and other regulatory and resource management agencies.

Moving forward with a process will also involve focused stakeholder and public involvement and the MBNMS encourages public participation throughout. Further, the MBNMS will be seeking additional input from its Sanctuary Advisory Council, the PFMC, NOAA Fisheries and other regional resource management partners regarding the process to establish MPAs in federal portions of the Sanctuary.

Sincerely,

Paul Michel

Paul Michel
Sanctuary Superintendent

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