June 25, 2003

Stephanie Harlan and Members of the Sanctuary Advisory Council
Monterey Bay National Marine Sanctuary
299 Foam Street
Monterey, CA 93940

RE: Special Marine Protected Areas Working Group and Action Plan

Dear Chair Harlan and Members of the Sanctuary Advisory Council:

On behalf of The Ocean Conservancy (TOC), World Wildlife Fund (WWF), and Save Our Shores (SOS), please accept the following comments regarding the Special Marine Protected Areas (SMPA) Working Group and proposed Action Plan. As active participants on the SMPA Working Group, we write to encourage the Sanctuary Advisory Council to adopt the proposed SMPA Action Plan and to continue the dialogue started in the Working Group. The SMPA Action Plan developed by the Working Group reflects a reasonable, science-based, balanced stakeholder approach to addressing a critical marine management issue and deserves the support of the Sanctuary Advisory Council.

This letter addresses the following key points:

- Support for the Joint Management Plan Review and the Working Group process.
- Support for the SMPA Action Plan.
- The Sanctuary’s mandate to protect living resources.
- The National Marine Sanctuary Act’s requirement that the management plan review address new information, the problems affecting Sanctuary resources and promising new management tools such as marine zoning.
- The Sanctuary’s designation documents outline a process for addressing marine zoning.
- The roles and responsibilities of stakeholders in a collaborative process.


As the Sanctuary Advisory Council is aware, over the past several months, the Sanctuary Program has hosted an unprecedented public process to insure the broadest possible community and stakeholder input in the important task of updating the Monterey Bay National Marine Sanctuary’s (MBNMS) management plan. As part of this public process, our organizations served on numerous Joint Management Plan Review (JMPR) “working groups” during Winter 2003 including the 21-member SMPA Working Group. During the SMPA Working Group
process, TOC, WWF, and SOS staff dedicated significant time, energy and resources while negotiating in good faith with other stakeholders. We believe this process was a successful effort to reach consensus regarding the appropriate initial steps for the MBNMS to address a controversial but critical marine conservation issue.

The SMPA Working Group met monthly from January 2003 through April 2003 in half-day meetings. An additional meeting was convened by a subset of the SMPA Working Group (primarily the fishing representatives) expressly to address the fishing representatives concerns regarding the specific language of the draft Action Plan. At each of these five meetings, stakeholders expressed their interests and concerns, and a full and robust discussion occurred. Considerable effort was made by all participants to address issues raised by others. As a result of these negotiations, the proposed Action Plan, adopted by the consensus of the Working Group at the April 10, 2003 meeting, reflected a compromise that addressed the concerns raised by all participants.

(2) The Proposed Action Plan Reflects a Reasoned Approach to SMPAs.

Our organizations support the recommendations of the SMPA Action Plan. The Action Plan represents a thoughtful process for moving forward to address an important tool for ecosystem protection: marine protected areas where harvest is limited or prohibited. While the MBNMS is itself a marine protected area, the SMPA Action Plan specifically addresses MPAs with harvest limitations or prohibitions. The plan refers to such areas as “special marine protected areas” or “SMPAs”. Experts including the American Fisheries Society, the American Association for the Advancement of Science, the National Research Council of the National Academy of Sciences, the Pew Oceans Commission and the United Nations, have all identified marine protected areas with harvest limitations and marine reserves that preclude harvest as an important (even necessary) tool for protecting and restoring marine ecosystems.¹ See Appendix 2 for additional background on the value of and scientific consensus on MPAs and marine reserves.

Establishment of marine protected areas including marine reserves in state waters is mandated under both the California Marine Life Protection Act (MLPA) and the Nearshore Fishery Management Plan created pursuant to the California Marine Life Management Act. The Pacific Fisheries Management Council has also identified marine reserves as a valuable management tool for federal waters. The Council has formally adopted marine reserves as a tool for managing the groundfish fishery but has been unable to implement reserves due to budget constraints.²

² The PFMC’s Strategic Plan for the Groundfish Fishery includes the following goal: To use marine reserves as a fishery management tool that contributes to groundfish conservation and management goals, has measurable effects, and is integrated with other fishery management approaches. See Marine Reserves section of PFMC website at: www.pfcouncil.org.
The proposed SMPA Action Plan provides a framework, containing strategies and activities that lay out a longer-term work plan for the MBNMS to address the timely issue of SMPAs. Virtually all of the recommendations in the plan include state and federal fisheries management agencies as potential partners.

Recognizing the value of special marine protected areas, both the Florida Keys National Marine Sanctuary and the Channel Islands National Marine Sanctuary included marine zoning in their recent management plan review processes. In both cases, the issue of marine zoning was sufficiently complicated to warrant its own process, distinct from the timeline of the management plan reviews themselves. The proposed SMPA Action Plan essentially suggests a similar model for the MBNMS.

(3) The Sanctuary Has a Mandate to Protect Living Resources.

The overall purpose of the National Marine Sanctuaries Act (NMSA) is to “improve the conservation, understanding, management, and wise and sustainable use of marine resources [...] . . . 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 processes [...] [and] to create models of, and incentives for, ways to conserve and manage these areas, including the application of innovative management techniques.”3 The Sanctuary system has a statutory mandate 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 processes.”4

According to the 1992 Final Environmental Impact Statement for the MBNMS, “[t]he purpose of the Monterey Bay National Marine Sanctuary is to provide a comprehensive ecosystem approach to natural and historical resource management. Sanctuary status would permit the implementation of a coordinated and comprehensive management scheme resulting in enhanced resource protection of ecological and historic resources.”5 The MBNMS Management Plan states that “the highest priority goal for the Sanctuary is the protection of its marine environment, resources and qualities” and notes that the Sanctuary must work with other resource management agencies to reduce threats to Sanctuary resources and qualities and ensure that management agencies adopt effective resource protection strategies.6

The fundamental purpose of the NMSA’s management plan review requirement is to ensure that sanctuary management remains effective over time.7 The Act require a periodic evaluation of existing management techniques, an assessment of whether a sanctuary has made “substantive progress” towards achieving its stated goals, and adoption of changes to the management plan if warranted by new information or changed

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4 16 U.S.C §1431(b)(3).
7 16 U.S.C §1431(e).
conditions. Thus a sanctuary management plan is intended to be a “living” document that incorporates the best available science and innovative management techniques.

(4) The JMPR Must Respond to New Information Regarding the Ecological Impacts of Fishing and the Problems of Declining Sanctuary Living Resources.

The decade since designation of the MBNMS has brought significant advancement in scientific understanding of the state of the ocean and marine resources. It has become increasingly evident that the oceans are facing serious problems including overfishing, habitat damage, and various forms of pollution. On June 4, 2003, the Pew Oceans Commission, chaired by former Monterey Bay Congressman Leon Panetta, released its final report on the state of the oceans: American’s Living Oceans - Charting a Course for Sea Change. Citing literally hundreds of peer-reviewed scientific studies, the Pew Report clearly and convincingly documents the severe problems facing the ocean and identifies specific steps that must be taken to address these problems. Among its many recommendations, the Pew Ocean Commission concluded that a national system of marine reserves is necessary to protect marine ecosystems.\(^8\)

A growing body of scientific evidence documents new understandings of the environmental impacts associated with fishing practices. A 1998 paper prepared by the National Oceanic and Atmospheric Administration, titled “Ecological Effects of Fishing” details a number of direct and indirect deleterious ecological effects including: reduced population sustainability, alteration of food chains and species composition, ghost fishing, and habitat damage.\(^9\) A recent paper in Science concluded that, in the past fifty years, there has been a global shift in the composition of capture fisheries to a lower trophic level.\(^10\) A study published in Nature this year estimated that worldwide, large predatory fish have declined by approximately 90% when compared to pre-industrial levels, resulting in significant changes to ecosystem structure and function.\(^11\) A 2002 report summarizing much of the recent research on the ecological impacts of fishing concludes: “[t]he weight of evidence overwhelmingly indicates that the unintended consequences of fishing on marine ecosystems are severe, dramatic, and in some cases irreversible.”\(^12\)

Nor is the MBNMS immune from the problems facing the world’s oceans. In the Sanctuary, many resident and transitory fish populations have declined, some severely, over the past decade. In 1991, several rockfish species found in the Sanctuary were listed as federally “overfished”; in 1997, the abalone fishery south of San Francisco was closed because of population declines, and there are concerns about the sustainability of nearshore fish populations. According to Trends in Fisheries and Fishery Resources Associated with the Monterey Bay National Marine Sanctuary From 1981 – 2000 (Starr, Cope, and Kerr, 2002),

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"The population status of a great many species harvested in the MBNMS is unknown. Available data, however, indicate that populations in shallow rocky habitats declined in the 1990s. In shallow soft bottom habitats in the MBNMS, the types of legal fishing gear are greatly limited, and populations of many species appear to be strong. Deep rocky habitats in the MBNMS harbor a large number of rockfishes and other species that have been heavily fished for decades. Population sizes of most of these species greatly declined in the 1980s, resulting in severe catch limitations in the 1990s. Because many of the fishes inhabiting deep rocky habitats are long-lived, slow growing, and have sporadic recruitment, it may take 10-20 years or more before we learn if current harvest levels are appropriate."

Significantly, most of these declines were not evident at the time of Sanctuary designation as landings for many of these fish stocks peaked in the early 1990’s. In November 2000, the American Fisheries Society published a list of North American fish species “at risk of extinction; The list included 22 fish species found along the Central Coast” Additional documentation of “the problem” facing Sanctuary living resources is found in Appendix 2. The MBNMS is legally obligated to respond to this new information regarding the status of, and threats to, the living resources and habitats of the MBNMS.

(5) The JMPR Must Address Promising Management Tools Including SMPAs and Marine Reserves.

Under the NMSA, a management plan review process must include an assessment of the effectiveness of existing sanctuary management techniques and adoption of revised management plans and regulations as necessary to fulfill the purposes and policies of the Act. According to the National Marine Sanctuary Management Plan Review Handbook prepared by the NMSP, one of the primary reasons reviews of management plans have been undertaken is because “most existing management plans do not incorporate state-of-the-art concepts and practices associated with management of marine protect areas.”

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13 This is clearly indicated in the designation documents for the MBNMS. See for example the FEIS response to comments: "NOAA agrees that there is little evidence that current fisheries management initiatives are inadequate. Therefore, fishing is not being regulated as part of the Sanctuary regime and is not included in the Designation Document as an activity subject to future regulations. However, if data does become available demonstrating that additional fishing regulations are necessary, NOAA can provide the PFMC with appropriate recommendations for PFMC action, or take appropriate direct action..." NOAA. June 1992. Monterey Bay National Marine Sanctuary Final Environmental Impact Statement and Management Plan. Response to Comments, Section 13: Fishing Activities. Pages F-41 through F-43.


15 16 U.S.C. §1431(e)

The Handbook also sets out fundamental principles for the review and revision of management plans. The first two of these principles are:

- Revised management plans will be consistent with principles of sound marine resource management, available scientific information, legal mandates, and program policies.
- The management plan review process will examine the conservation role of each Sanctuary and determine if that role is as strong as is warranted to protect Sanctuary resources.

Application of these principles to the JMPR process demonstrates that the MBNMS must address marine zoning as a marine management tool capable of helping achieve many of the Sanctuary’s stated goals related to ecosystem protection and research. Furthermore, the Handbook specifically notes that “[a]n examination of the conservation role [of a Sanctuary] will involve a consideration of whether marine zoning is appropriate for the Sanctuary, and what types of zones, including those that restrict or prohibit harvest activities, are warranted.”17 The Handbook thus requires each sanctuary to take a “hard look” at marine zoning during its management plan review.

The MBNMS’ JMPR process is also guided by Executive Order 13158.18 The purpose of the Executive Order is to strengthen the management, protection, and conservation of existing marine protected areas. Among the Executive Order’s provisions is a requirement that federal bodies, such as the Sanctuary, prepare biological assessments of the minimum areas where consumptive uses should be prohibited to preserve representative habitats in different geographic areas of the marine environment; and assessments of threats and gaps in levels of protection currently afforded to natural and cultural resources.

The Sanctuary not only has the legal authority, but, as noted above, the legal obligation, to review changed conditions and, within the detailed and rigorous public process spelled out under the law, adopt changes to its management plan as necessary to meet its mandate of resource protection. Indeed, this is the very purpose of the legal requirement that management plans undergo comprehensive review.19

(6) The MBNMS Designation Documents Establish the Process for Addressing Marine Zoning.

The designation documents for the MBNMS currently do not include fishing under the activities to be regulated, in part because fishing was not considered a major threat to the sanctuary’s resources in 1992. However, the documents do contemplate potential changes in the future as new information becomes available, which is why they expressly discuss the process that must be followed to make such changes. Significantly, regarding fisheries issues, the designation documents note that changes to Sanctuary management, or to the designations documents

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17 Id.
themselves, require a public process including consultation with fisheries management agencies, the fishing community and the public.

The designation documents clearly identify the distinction in mandates between the fisheries agencies and the Sanctuary Program and establish the process for future collaboration on resource protection, as needed. As noted in the 1992 Monterey Bay National Marine Sanctuary Final Environmental Impact Statement and Management Plan for the MBNMS:

"Existing fishery management agencies are primarily concerned with the regulation and management of fish stocks for a healthy fishery. In contrast, the National Marine Sanctuary Program has a different and broader mandate under the [NMSA] to protect all Sanctuary resources on an ecosystem-wide basis…

Due to the different mandate of the Sanctuary and the need to address this critical component of the Monterey Bay ecosystem should problems arise in the future, NOAA would consult with the state, PFMC and NMFS, as well as the industry to determine an appropriate course of action…

NOAA agrees that certain fish species in the Sanctuary may eventually need to be regulated."

As discussed above, scientific evidence collected over the past ten years makes a strong case that current fisheries management initiatives are not adequate to protect Sanctuary living resources and new approaches must be considered. The proposed SMPA Action Plan commits the MBNMS to a collaborative process for addressing SMPAs, exactly the approach directed by the Sanctuary’s designation documents. Staff from NOAA Fisheries, the Pacific Fisheries Management Council and the California Department of Fish and Game all served on the SMPA Working Group. Fully one third of the representatives of the SMPA Working Group were members of the fishing community and harbormasters representing fishing concerns. The rest of the group included a range of interests from science and education, agencies (including fisheries agencies), diving and conservation. Furthermore, the fishing community and fisheries management agencies are listed as potential partners on virtually every activity listed in the proposed SMPA Action Plan. Thus, the MBNMS is following the precise requirements set out in the Designation Documents as it considers the issue of marine zoning, SMPAs and marine reserves. Finally, the SMPA Action Plan recommends continuing this collaborative effort with continued involvement by the SMPA Work Group.

(7) Roles and Responsibilities of Stakeholders.

Over the past two years, our organizations have witnessed the Monterey Bay National Marine Sanctuary make repeated and consistent efforts to reach out to members of the fishing community in an attempt to improve communication and address issues of mutual interest. The MBNMS spent many months working with the Alliance of Communities for Sustainable Fisheries, sponsoring a facilitator to assist with Alliance marine protected area discussions, and recently hosted a special JMPR meeting with the fishing community – a service not provided to
any other interest group. Fishing representatives participated in many of the JMPR Working Groups and were particularly well represented on the SMPA Working Group.

Our organizations recognize the importance of working with the fishing community in good faith to ensure Sanctuary resources are protected. SOS, TOC and WWF staff have attended and participated in a number of meetings and discussion hosted by the Alliance of Communities for Sustainable Fisheries. We supported formalizing the Business and Tourism Advisory Panel in an effort to improve communication between coastal dependent businesses and the SAC. In 2002, SOS hosted a fisherman’s forum on MPAs attended by over 100 fishermen. Our organizations also supported adding a trawling seat to the SMPA Working Group to ensure the fullest representation of the fishing community. We are committed to continued collaboration with a broad range of stakeholders and believe that open communication between all interested parties will help ensure that management of the MBNMS is cutting edge and fully protects all the unique resources of the Sanctuary.

Before closing we want to briefly address a letter written to the Sanctuary Resource Protection Director Holly Price, dated May 29, 2003, and signed by the fishing representatives on the SMPA Working Group. This letter was also circulated to a long list of additional parties. As members of the SMPA Working Group we were puzzled about the purpose of this letter and disappointed by its circulation. Although a careful comparison of the points raised in the May 29, 2003 letter and the proposed SMPA Action Plan demonstrates that the fishing representatives concerns were specifically addressed in the Working Group process, the tone of the letter implies otherwise. For readers (such as those on the lengthy cc list) who have not read the SMPA Action Plan, or are not familiar with the JMPR and its broad stakeholder process, the May 29, 2003 letter may give an inaccurate impression. To be clear: the fishing representatives’ concerns were fully discussed in the Working Group and reflected in the consensus agreement.

We welcome opportunities to engage in constructive dialog with all interested stakeholders and look forward to continued discussions as the JMPR process moves forward. However, we do note that participation in a cooperative stakeholder process includes a responsibility on all involved stakeholders to negotiate in good faith. We do not believe it is appropriate for any one interest group to try to exercise “veto power” over decisions that affect management of public resources. Ultimately, it is the National Marine Sanctuary Program’s responsibility to manage the resources under its jurisdiction for the benefit of all Americans, consistent with its resource protection mandate.

(8) Conclusion

When former Congressman and Pew Commission Chair Leon Panetta attended a SAC meeting in April 2002, he warned the Advisory Council that we had the choice of governing the oceans by leadership or by crisis and recommended that the MBNMS govern by leadership, even though it meant tackling difficult issues. Congressman Panetta advised the SAC that controversial issues, like marine reserves, should not be avoided, but should be addressed by bringing all participants to the table to negotiate in good faith. This is precisely the process the SMPA Working Group followed and that the proposed SMPA Action Plan recommends continuing. Our organizations urge the SAC to support the proposed SMPA Action Plan.
Thank you for your consideration of these comments.

Sincerely,

Kaitlin Gaffney  
The Ocean Conservancy

Mike Osmond  
World Wildlife Fund

Vicki Nichols  
Save Our Shores

Attachments:  Appendix 1 – Evidence of the Problem  
Appendix 2 – Marine Reserves (including AAS Scientific Consensus Statement)  
Appendix 3 – MBNMS FEIS Response to Comments regarding Fishing Activities

cc:  Members of the SMPA Working Group  
The Honorable Sam Farr  
Conrad Lautenbacher, Undersecretary for Oceans and Atmosphere, NOAA  
Jamison Hawkins, NOAA  
William Hogarth, NMFS  
Donald McIsaac, PFMC  
Robert Hight, CDFG  
Dan Basta, NMSP  
William Douros, MBNMS
APPENDIX 1

PROBLEMS FACING THE MARINE RESOURCES OF THE MBNMS

The May 29, 2003 letter to the Sanctuary states that that evidence of “the problem” is required before the Sanctuary can proceed to further consider marine protected areas. This is an issue that was also discussed at length in the MPAWG process. The most cursory review of the literature provides voluminous evidence of serious problems facing marine resources of the West Coast including the MBNMS.

Examples of Problems with Fisheries

According to the 2002 Status of Stocks prepared for Congress by NOAA Fisheries, of the 22 Pacific coastal pelagic, rockfish, and flatfish stocks that are assessed, nine are overfished and 13 are not (41% of known stocks are overfished). Seven of the nine overfished stocks are fished in the waters of the MBNMS.\(^1\)

According to a 2002 report prepared by California Seagrant to specifically address the fisheries of the Monterey Bay National Marine Sanctuary:

"The combined catch of all other species [aside from small pelagic fishes and squid] decreased by about 50% from the mid-1980's to the late 1990's. The decline in landings was directly related to reduced population sizes of many of the species inhabiting deep-water bottom habitats, caused by excessively high rates of fishing in the 1980's, when fishery scientists and resource managers overestimated the productively of bottom fish."\(^2\)

Many of the fish populations of the California coast have been significantly depleted from overexploitation for decades.\(^3\) Some fisheries in the area have followed a boom-and-bust pattern, in which excessive investment in a fishery has resulted in periods of very high yields, followed by dramatic declines in both population and harvest levels. In some cases, stocks have recovered when fishing pressure is removed, either due to a shift in fishing effort to more abundant species or when regulations are finally put into effect. Examples of this include the sardine fishery and the Dungeness crab fishery.\(^4\)

However, many of the currently most severely depleted fisheries have been subject to intense pressure in relatively recent times. In some cases, fishing pressure actually increased after Sanctuary designation in 1992 and management measures have been slow to address developing crises. For example, the commercial abalone fishery declined by more than 50% from 1992 to

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\(^4\) Both sardines and crabs are also strongly influenced by environmental conditions, however, it is widely recognized that intense fishing pressure was a major factor in the decline in these species in the first half of the 20th Century.
1997 when it was closed completely. Just after the creation of the MBNMS came the advent of the live fish fishery, and the introduction of stick gear, in the Central Coast. Live fish fishery landings at MBNMS ports increased from 25,429 pounds in 1993 to 923,584 lbs in 1998 before dropping to 340,983 in 2000. The average annual commercial landings of all fishes from shallow rocky habitats in the period from 1991 to 1998 were double those of the 1980’s, and by 1998, these fisheries were in sharp decline. In 2000, commercial landings of Nearshore rocky reef fish were down approximately 2/3 from 1992 levels.

Fishing pressure in the MBNMS is not limited to the commercial sector as recreational harvest exceeds commercial landings for many nearshore species. Declining rockfish lengths in the Monterey Bay area recreational rockfish fisheries are another indication of excessive fishing pressure. A 1998 study documented that the mean length of bocaccio, chilipepper, yellowtail, canary and blue rockfish caught on recreational charter boats dropped below the size at which 50% of the females were mature. Bocaccio and canary rockfish have since been declared “overfished” by the NMFS.

Nor are the problems relegated to the nearshore: the combined catch of all rocky deep shelf and slope species in the MBNMS (a category that includes a variety of rockfish) declined by approximately 80% from 1992 to 2000. In response to these declines, in January 2000 the federal government declared a disaster in the Pacific groundfish fishery, which includes rockfish. In June 2002, the Pacific Council voted to closed much of the Pacific coast to bottom fishing. Clearly fisheries within Sanctuary waters currently face severe problems that were not evident at the time of Sanctuary designation.

As noted earlier, while overall landings of all species combined in the MBNMS increased in the period from 1981-2000; this increase is attributed to the dramatic surge in catches of some small pelagic fishes (anchovy and sardines) and squid. The increase in landings of small coastal pelagic fishes and squid is of significant concern because these species are highly variable, strongly influenced by environmental conditions, and are important components of the food chain, serving as prey for fish, as well as seabirds and marine mammals including endangered and threatened Sanctuary species. For example, small squid are known to provide at least 30% of the diet for at least 10 species of marine mammals. In addition, several recreationally and commercially important fish species, including Pacific rockfish, rely on small squid for food.

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5 The abalone harvest in California reached a peak of 3.9 million pounds in 1935. Although pollution, disease and the presence of sea otters on the Central Coast are contributing factors affecting the recovery of abalone species, it was commercial and recreational fishing that drove abalone populations down to near extinction levels.

6 Starr at 46. Table 6.

7 Starr at ii.

8 Starr at 1.


10 Starr at 56.


Our organizations are concerned that the Market squid fishery in Monterey could be headed for disaster. The 2002 fishery yielded over a 300% increase from the average catch since 1980 and was the highest recorded in the 75-year history of the Northern California squid fishery. The only management measures currently in existence to “protect the squid resource” are weekend closures, and a catch cap that is a three-year average of the highest recorded landings in the 75-year history of the fishery. The landings cap for the squid fishery, adopted in 2001, was intended to keep squid catch at a status quo level. However, the cap was issued for statewide catches. When unfavorable conditions hit Southern California this year, it created an unprecedented, dramatic increase in fishing pressure in Monterey. Little is known about the present size, structure or population status of California squid.

Perhaps of greatest concern is the fact that most of the fish species targeted by commercial and recreational fisheries in the Sanctuary, such as tuna, swordfish, many rockfish and flatfish, are not assessed. Our organizations are extremely concerned about the inadequacy of existing information regarding the status of fish stocks as well as the indirect effects of fishing on non-target species and habitat. According to the 2002 Status of Stock, only 22% of the 165 federally managed fish stocks in the Pacific Region are currently assessed. State managed fisheries face similar information limitations.

**Examples of Problems Associated with Fishing**

Fishing can also result in significant ecological impacts including habitat damage and impacts to non-target species.\(^{13}\) Scientific knowledge regarding these impacts has advanced significantly in the decade since Sanctuary designation, disproving many of the assumptions about the [lack of] impacts of fishing that were included in the FEIS.

According to the MBNMS FEIS, “There is almost no data regarding the effects of roller trawling, or the one to two boat trap-fishery, to resources near and on the bottom such as benthic organisms and habitats (Edward Melvin, pers. comm., March, 1990). However, preliminary estimates from the few boats that roller trawl and trap would indicate very minimal impact (pers. comm., CDFG, March 1990).” Since that time, significant new data has demonstrated the adverse impacts of trawling including a study within the Monterey Bay National Marine Sanctuary itself.

According to a 2002 report published by the Ocean Studies Board of the National Academy of Science, high intensity trawling results in lower biodiversity and habitat complexity, and creates areas that are dominated by opportunistic species and bottom trawling has both long and short-term effects on ocean floor ecosystems, habitats, and species composition. The report also noted: “[i]mportant trawl grounds for California are, for the most part, found from Monterey

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north to the Oregon border, with relatively intense fishing between Santa Cruz and San Francisco..."\textsuperscript{14}

A 1998 study by Engel and Kvitek examined trawled areas in Monterey Bay, concluding that, "bottom trawling is one of the most disruptive and widespread human-induced physical disturbances to seabed communities and has become a global environmental concern. [The] study provides evidence that high levels of trawling can decrease bottom habitat complexity and biodiversity and enhance the abundance of opportunistic species and certain prey important in the diet of commercially important species."\textsuperscript{15} The study showed that sea pens, sea stars, sea anemones, sea slugs, and most polychaete worms were all far less abundant and overall biodiversity was about 50% less in a highly trawled area compared with lightly trawled areas. Another Pacific study found significant differences in rockfish assemblages between trawled and untrawled areas. The rockfish assemblages differed significantly in species composition, biodiversity, and biomass, with the untrawlable regions having significantly larger catches than the trawlable habitats.\textsuperscript{16}

Aside from direct removal of targeted species and gear induced habitat damage, fishing also impacts species that are taken incidentally including both fish and nonfish bycatch. Fishermen trap, hook, and drown thousands of marine mammals, seabirds, and turtles accidentally every year. Gillnets are particularly effective at capturing these species and thousands of seabirds and marine mammals were destroyed by gillnets in Central Coast fisheries in the early 1980s. After regulations on gillnets were imposed by the State of California in the late 1980's, the 1992 MBNMS FEIS concluded that gillnets did not present a problem for Sanctuary living resources: "The current regulations on this fishery prevent gill-netters from fishing within 30 fathoms and would effectively move the current gill-net inshore fishery beyond the zone of distribution of shore birds and coastal marine mammals." This conclusion has since been proven false. During the 1990's, gillnet mortality of Common Murres average in the low thousands of birds per year — high enough to affect species recovery.\textsuperscript{17} NMFS observer data for the year 2000, with coverage on 20-25% of all fishing trips, resulted in estimated mortality in Monterey area of over 3000 seabirds, 26 cetaceans, and 214 pinnipeds.\textsuperscript{18} In 2002, the CDFG was required to issue an emergency closure of the gillnet fishery in waters 60 fathoms or less from Point Reyes to Point Arguello to protected seabirds and marine mammals.

\textsuperscript{14} Ocean Studies Board. 2002. Effects of Trawling and Dredging on Seafloor Habitat. National Academy of Science. Page 46
APPENDIX - 2

MARINE RESERVES: AN EFFECTIVE MANAGEMENT TOOL

In the decade since the designation of the Monterey Bay National Marine Sanctuary, a scientific consensus has emerged regarding the effectiveness of marine protected areas and marine reserves as an ocean management tool – particularly for protecting biodiversity and habitat. Currently, the MBNMS contains three tiny marine reserves covering approximately .05% of Sanctuary waters.

In the past few years, literally dozens of peer-reviewed articles have appeared in scientific journals documenting the effectiveness of marine reserves. For example, the February 2003 supplemental issue of Ecological Applications was devoted exclusively to marine reserves\(^ {19} \) including an article that provides a comprehensive review of studies on the performance of 89 marine reserves which “reveals that most well-enforced marine reserve result in relatively large, rapid, and long lasting increases in the population sizes, numbers of species, and reproductive output of the marine animals and plants.”\(^ {20} \) Significantly, more than half of the studies cited in this paper were published \textit{after} the MBNMS designation; demonstrating the relative recentness of such evidence.

On average, the reserves studied had twice as many fish overall and three times as many large fish as exploited areas. According to a report prepared for the Pew Oceans Commission, “[t]he overwhelming result of decades of study of reserves is that heavily exploited species recover within reserve borders, becoming more numerous and larger.”\(^ {21} \) These positive effects held true in temperate and tropical waters, for fish and shellfish, and in a wide range of habitats. Sport fishermen working at the borders of reserves report catching record-sized fish.\(^ {22} \) There is growing evidence that marine reserves can help sustain nearby fisheries by exporting adults into the surrounding waters.\(^ {23} \)

The ability of reserves to shelter large fish is particularly critical to the ecosystem. Many fish take years to mature and reproduce—some begin spawning after only a couple of years, others require at least a decade. As fish grow larger, their ability to produce eggs increases exponentially so that in terms of making new fish, one big fish can equal a hundred smaller fish. In very long-lived species such as Pacific rockfish, large individuals (over 20 years old) produce the majority of eggs for the entire population of fish. Marine reserves also play a critical role by protecting large predators. In California, large fish are important urchin predators; so protecting

\(^ {19} \) February 2003. The Science of Marine Reserves. \textit{Ecological Applications} 13(1). This issue contains 17 articles on marine reserves.


\(^ {23} \) Gell, F & C. Roberts. 2002. The Fishery Effects of Marine Reserves and fishery Closures. WWF U.S.
large animals also helps protect kelp forests. When fishing depletes these predators, purple urchin populations explode, mowing down kelps and leaving areas barren. 24

For all that is known about the ocean, far more remains unknown. Many of the species targeted in California, are poorly understood and have never been scientifically assessed. Our power to predict the consequences of our actions in a constantly changing sea is extremely low. New discoveries about the influence on fish abundance of El Nino and other shifts in ocean temperature and productivity underscore that a high level of uncertainty is inherent in our estimates of fish population trends. Marine reserves protect real fish, rather than fish populations estimated in computer models. Marine reserve networks provide marine resource managers with insurance in the face of limited knowledge, uncertainty, and unpredictable changes in the ocean environment.

THE SCIENTIFIC CONSENSUS STATEMENT

At the February 2001 annual meeting of the American Association for the Advancement of the Sciences (AAAS), 161 leading marine scientists and experts on marine reserves (signatories all hold Ph.D. degrees and are employed by academic institutions) took the extremely unusual step of signing onto a joint scientific consensus statement on marine reserves. 25 See attached.

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25 http://www.CompassOnline.org. At the 1997 AAAS annual meeting, a symposium on marine protected areas raised a number of unresolved critical scientific issues and identified research priorities. In response, an international team of scientists was convened at the National Center for Ecological Analysis and Synthesis (NCEAS) and charged with developing better scientific understanding of marine protected areas and marine reserves. Conclusions from the two-and-a-half-year efforts of this working group are in the February 2003 Ecological Applications. This Scientific Consensus Statement is based upon the results of those studies and other research already published elsewhere. The Statement was drafted in response to repeated requests by many fishermen, marine resource managers, governmental officials, conservation activists, interested citizens and others for a succinct, non-technical but scientifically accurate summary of the current scientific knowledge about marine reserves.
SCIENTIFIC CONSENSUS STATEMENT ON
MARINE RESERVES
AND MARINE PROTECTED AREAS

THE CONTEXT

At the 1997 Annual Meeting of the American Association for the Advancement of Science (AAAS), a symposium on marine protected areas reviewed the state of the oceans, raised a number of unresolved critical scientific issues and identified research priorities. In response, an international team of scientists was convened at the National Center for Ecological Analysis and Synthesis (NCEAS) and charged with developing better scientific understanding of marine protected areas and marine reserves. Conclusions from the two-and-a-half-year efforts of this working group are in press in a special issue of the journal Ecological Applications. This Scientific Consensus Statement is based upon those results and other research already published elsewhere. The Statement is a joint effort of the NCEAS scientists and the academic scientists participating in a meeting on marine reserves convened by COMPASS (Communication Partnership for Science and the Sea). This Statement was drafted in response to repeated requests by many fishermen, marine resource managers, governmental officials, conservation activists, interested citizens and others for a succinct, non-technical but scientifically accurate summary of the current scientific knowledge about marine reserves. Additional information on the history of this Statement, NCEAS and COMPASS appears after the Statement.

New Approaches Are Needed:

The declining state of the oceans and the collapse of many fisheries have created a critical need for new and more effective management of marine biodiversity, populations of exploited species and overall health of the oceans. Marine reserves are a highly effective but under-appreciated and under-utilized tool that can help alleviate many of these problems. At present, less than 1% of United States territorial waters and less than 1% of the world's oceans are protected in reserves.
What are Marine Reserves?

Marine Reserves (MRVs) are areas of the sea completely protected from all extractive activities. Within a reserve, all biological resources are protected through prohibitions on fishing and the removal or disturbance of any living or non-living marine resource, except as necessary for monitoring or research to evaluate reserve effectiveness. Marine reserves are sometimes called “ecological reserves,” “fully-protected marine reserves,” or “no-take areas.” MRVs are a special category of Marine Protected Areas (MPAs). MPAs are areas designated to enhance conservation of marine resources. The actual level of protection within MPAs varies considerably; most allow some extractive activities such as fishing, while prohibiting others such as drilling for oil or gas. A Network of Marine Reserves is a set of MRVs within a biogeographic region, connected by larval dispersal and juvenile or adult migration.

THE SCIENTIFIC CONSSENSUS

The first formal marine reserves were established more than two decades ago. Recent analyses of the changes occurring within these MRVs allow us to make the following conclusions:

Ecological effects **within reserve boundaries:**

1) Reserves result in long-lasting and often rapid increases in the abundance, diversity and productivity of marine organisms.

2) These changes are due to decreased mortality, decreased habitat destruction and to indirect ecosystem effects.

3) Reserves reduce the probability of extinction for marine species resident within them.

4) Increased reserve size results in increased benefits, but even small reserves have positive effects.

5) Full protection (which usually requires adequate enforcement and public involvement) is critical to achieve this full range of benefits. Marine protected areas do not provide the same benefits as marine reserves.

Ecological effects **outside reserve boundaries:**

1) In the few studies that have examined spillover effects, the size and abundance of exploited species increase in areas adjacent to reserves.

2) There is increasing evidence that reserves replenish populations regionally via larval export.
Ecological effects of reserve networks:

1) There is increasing evidence that a network of reserves buffers against the vagaries of environmental variability and provides significantly greater protection for marine communities than a single reserve.

2) An effective network needs to span large geographic distances and encompass a substantial area to protect against catastrophes and provide a stable platform for the long-term persistence of marine communities.

ANALYSES OF THE BEST AVAILABLE EVIDENCE LEAD US TO CONCLUDE THAT:

♦ Reserves conserve both fisheries and biodiversity.

♦ To meet goals for fisheries and biodiversity conservation, reserves must encompass the diversity of marine habitats.

♦ Reserves are the best way to protect resident species and provide heritage protection to important habitats.

♦ Reserves must be established and operated in the context of other management tools.

♦ Reserves need a dedicated program to monitor and evaluate their impacts both within and outside their boundaries.

♦ Reserves provide a critical benchmark for the evaluation of threats to ocean communities.

♦ Networks of reserves will be necessary for long-term fishery and conservation benefits.

♦ Existing scientific information justifies the immediate application of fully protected marine reserves as a central management tool.

This Scientific Consensus Statement is signed by 161 leading marine scientists and experts on marine reserves. Signatories all hold Ph.D. degrees and are employed by academic institutions. Names and affiliations of signatories appear on pages 5 - 12.
### Issue 13: Fishing Activities

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<th>Comment</th>
<th>NOAA Response</th>
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<td>Regulation and Prohibition</td>
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Fishing should not be prohibited within the Sanctuary. Instead, fisheries resource regulation should remain under the jurisdiction of the state of California, the National Marine Fisheries Service, (NMFS) and the Pacific Fisheries Management Council (PFMC). This should be clarified in the FEIS/MP.

| Regulation and Prohibition |

Existing fisheries are not being regulated as part of the Sanctuary regime and fishing is not included in the Designation Document as an activity subject to future regulation. Fisheries management will remain under the existing jurisdiction of the state of California, NMFS and PFMC. Sanctuary prohibitions that may indirectly affect fishing activities (Deposit and Discharging Activities, Alteration of or Construction on the Seabed, Historic Resource Protection, and Taking of Marine Mammals and Seabirds) have been written to explicitly exempt aquaculture, kelp harvesting, and traditional fishing activities. However, if in the future NOAA determines that these exemptions are resulting in injury to Sanctuary resources or qualities from aquaculture, kelp harvesting, or traditional fishing activities, changes to the Sanctuary regulations would be undertaken pursuant to the APA's notice-and-comment rulemaking process and the requirements of NEPA.

Existing fishery management agencies are primarily concerned with the regulation and management of fish stocks for a healthy fishery. In contrast, the National Marine Sanctuary Program has a different and broader mandate under the MPRSA to protect all Sanctuary resources on an ecosystem-wide basis. Thus, while fishery agencies may be concerned about certain fishing efforts and techniques in relation to fish stock abundance and distribution, the SRD is also concerned about the potential incidental impacts of specific fishery techniques on all Sanctuary resources including benthic habitats or marine mammals as well as the role the target species plays in the health of the ecosystem. In the case of Monterey Bay, fish resources are already extensively managed by existing authorities and NOAA does not envision a fishery management role for the Sanctuary at this time. SRD will provide research results and recommendations to existing fishery management agencies in order to enhance the protection of fishery and other resources within the Sanctuary.

Due to the different mandate of the Sanctuary and the need to address this critical component of the Monterey Bay ecosystem should problems arise in the future, NOAA would consult with the state, PFMC and NMFS, as well as the industry to
<table>
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<tr>
<td>Certain fish species in Monterey Bay should</td>
<td>NOAA agrees that certain fish species in the Sanctuary may eventually need to be regulated. See above response for how NOAA would proceed if problems related to fishing should arise.</td>
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<td>be regulated due to continuing declines.</td>
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<td>Gill Net, Trammel Net, and Other Fishing</td>
<td>Gill Net, Trammel Net, and Other Fishing Methods</td>
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<td>Methods</td>
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<td>Gill net fishing and the number of</td>
<td>NOAA believes that existing authorities, as described below, are adequately managing these activities and further regulation is unnecessary. NOAA has the ability to seek additional protection in the future (see response to first Fishing Activity comment above.)</td>
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<td>non-targeted species that perish in the</td>
<td>The gill net fishery has been regulated since 1984 by the state and Federal governments because of the mortality of marine mammals and birds. Currently, gill netting is restricted to waters deeper than 20 fathoms. In 1989, the halibut gill net fishing was closed inside 40 fathoms. Future regulations on this fishery are pending which would prevent gill net fishing from occurring within 30 fathoms. This would effectively move the current gill net inshore fishery beyond the zone of distribution of shore birds and coastal mammals.</td>
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<td>gill net industry are a concern. Gill nets</td>
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<td>and trammel nets should be prohibited</td>
<td>The trawl fishery has also been extensively regulated and no trawlers are currently allowed within three miles of the coast. Unfortunately, there is almost no data regarding the effects of roller trawling on benthic organisms and habitats. NOAA may consider studying the effects of bottom trawling to determine if there are negative impacts on benthic organisms and the surrounding environment.</td>
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<td>throughout the Sanctuary. Bottom dredge,</td>
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<td>trawl, and drag-net fishing methods should</td>
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<td>also be prohibited because of the damage to</td>
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<td>benthic natural resources.</td>
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<td><strong>Shark Fishing</strong>&lt;br&gt;Commercial shark fishing should be strongly limited until enough research has been done to establish sustainable yields for specific species. Direct quotas should be established for shark species within the Sanctuary.</td>
<td><strong>Shark Fishing</strong>&lt;br&gt;NOAA will work with fishermen and local management agencies as well as the CDF&amp;G, NMFS, and the PFMC to determine if additional management measures are necessary to protect shark species. NMFS wrote and released a draft shark fishery management plan for public comment this year for the East Coast and Gulf of Mexico. If a shark management plan is developed for West Coast species, SRD will be involved in its formulation and evaluation, and will provide recommended courses of action. NOAA may consider focusing research funds on the study of shark ecology for those species that exist within the Sanctuary. All fishing activities in Federal waters are under the control of the PFMC and NMFS. Fishermen in state waters are managed by the CDF&amp;G. SRD will work with these agencies to determine if any shark plans or regulations are necessary to protect these species from this activity.</td>
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<td>The practice of cutting off shark fins (finning) and discarding the carcasses should be banned within the Sanctuary. Recreational sport fishing for sharks should be severely limited, and selling shark catch should be prohibited.</td>
<td><strong>Comments on the DEIS/MP</strong>&lt;br&gt;NOAA agrees that there is little evidence that current fisheries management initiatives are inadequate. Therefore, fishing is not being regulated as part of the Sanctuary regime and is not included in the Designation Document as an activity subject to future regulation. However, if data does become available demonstrating that additional fishing regulations are necessary, NOAA can provide the PFMC with appropriate recommendations for PFMC action, or take appropriate direct action (see response to first Fishing Activity comment above).</td>
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<td><strong>Comments on the DEIS/MP</strong>&lt;br&gt;The DEIS/MP did not demonstrate that additional fishing regulations in the Sanctuary were necessary to protect fish populations.</td>
<td>Constructing, placing, or abandoning any structure, material, or other matter on the seabed of the Sanctuary is prohibited; except when resulting incidentally from traditional fishing operations, such as the use of trape and bottom trawls; aquaculture; or kelp harvesting (see also response to first Fishing Activity comment above).</td>
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<td><strong>What structures or materials on the seabed in connection with fishing will be allowed?</strong></td>
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