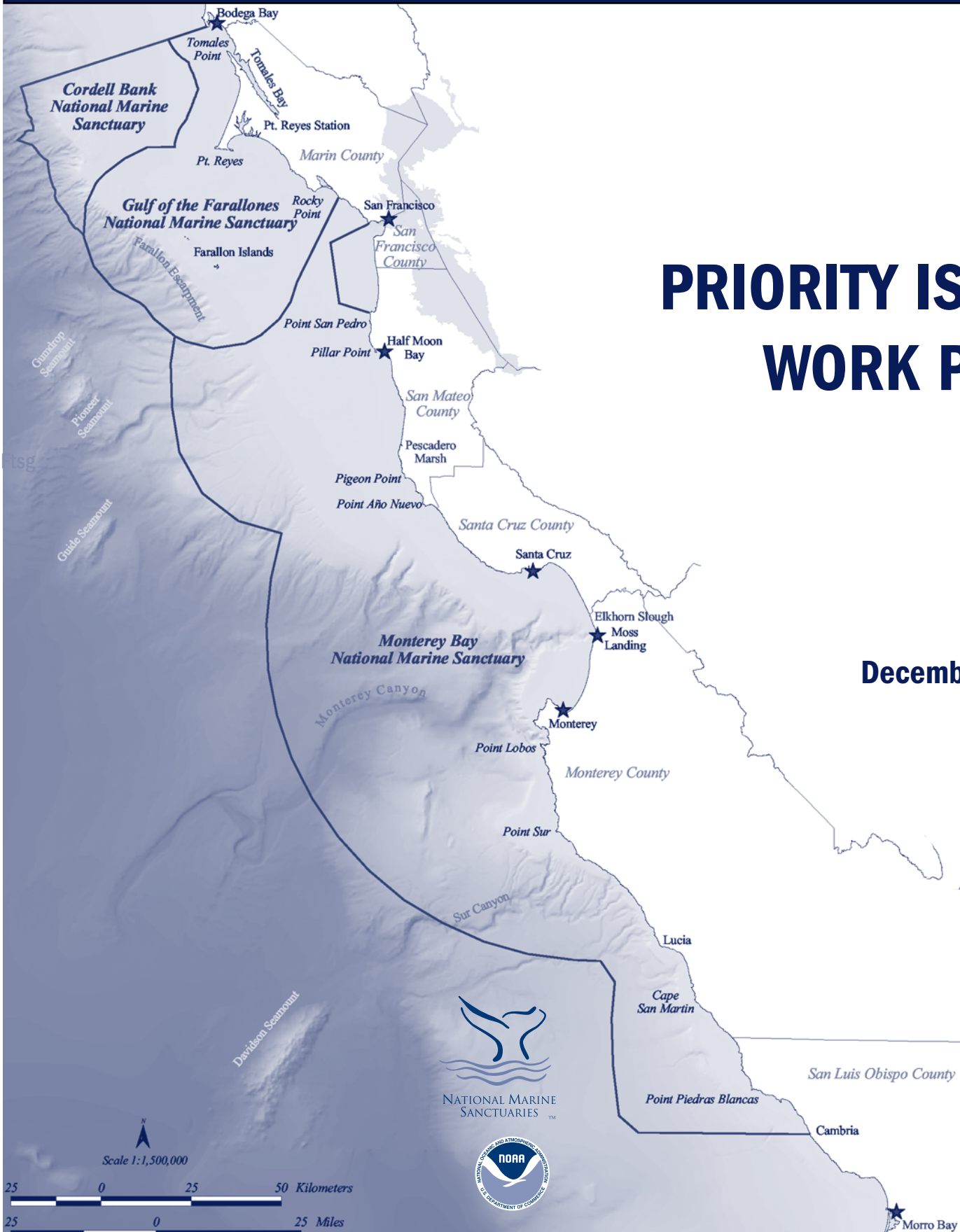


# Joint Management Plan Review (JMPR) Cordell Bank, Gulf of the Farallones & Monterey Bay National Marine Sanctuaries

## PRIORITY ISSUE WORK PLAN

December 4, 2002



**Joint Management Plan Review (JMPR)  
Cordell Bank, Gulf of the Farallones, and  
Monterey Bay National Marine Sanctuaries**

**JMPR Issue Work Plan**

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## **Introduction**

### Joint Management Plan Review

Management plans are sanctuary-specific planning and management documents that describe the objectives, policies, and activities for a sanctuary. They generally outline regulatory goals, describe boundaries, identify staffing and budget needs, set priorities and performance measures for resource protection, research and education programs. Management plans also guide the development of future management activities.

The National Marine Sanctuary Program (NMSP) is required by law to periodically review sanctuary management plans to ensure the sanctuary sites continue to best conserve, protect, and enhance their nationally significant living and cultural resources. Cordell Bank, Gulf of the Farallones and Monterey Bay National Marine Sanctuaries each have their own management plan, but they are between 10 – 20 years old and have not been updated. Recent scientific discoveries, advancements in managing marine resources, and new resource management issues may not be adequately addressed in these existing plans.

The NMSP is reviewing all three management plans jointly. These sanctuaries are located adjacent to one another, managed by the same program, and share many of the same resources and issues. In addition, all three sites share many overlapping interest and user groups. It is also more cost effective for the program to review the three sites jointly rather than conducting three independent reviews. Using a community-based process that will continue to provide numerous opportunities for public input, the NMSP will determine whether current issues and threats to the resources are the same as when the initial management plan was developed, and whether the management plan put in place at that time is adequately protecting sanctuary resources. The review will also evaluate management strategies, regulations and boundaries.

### Purpose of Work Plan

The National Marine Sanctuary Program (NMSP) is addressing priority issues by developing a draft Sanctuary Management Plan. A Sanctuary Management Plan is comprised of issue-specific action plans for activities and programs that will be implemented during the next five years. The NMSP will develop these action plans to address priority site-specific and cross-cutting issues with the help of the public. For some issues, working groups comprised of staff, Sanctuary Advisory Council (SAC) members, and subject experts will be established to further characterize the issue and develop strategies to address them. The recommendations of these working groups will be presented to each SAC. Other issues may be addressed by an internal team comprised of NMSP staff who will develop recommendations for each SAC. SAC members and other subject experts will be invited to participate in the working groups after the work plan is finalized. All working group meetings and SAC meetings are open to the public and the locations and times of these meeting will be posted on the JMPR website (<http://www.sanctuaries.nos.noaa.gov/jointplan/>).

**Identification and Prioritization of Issues**

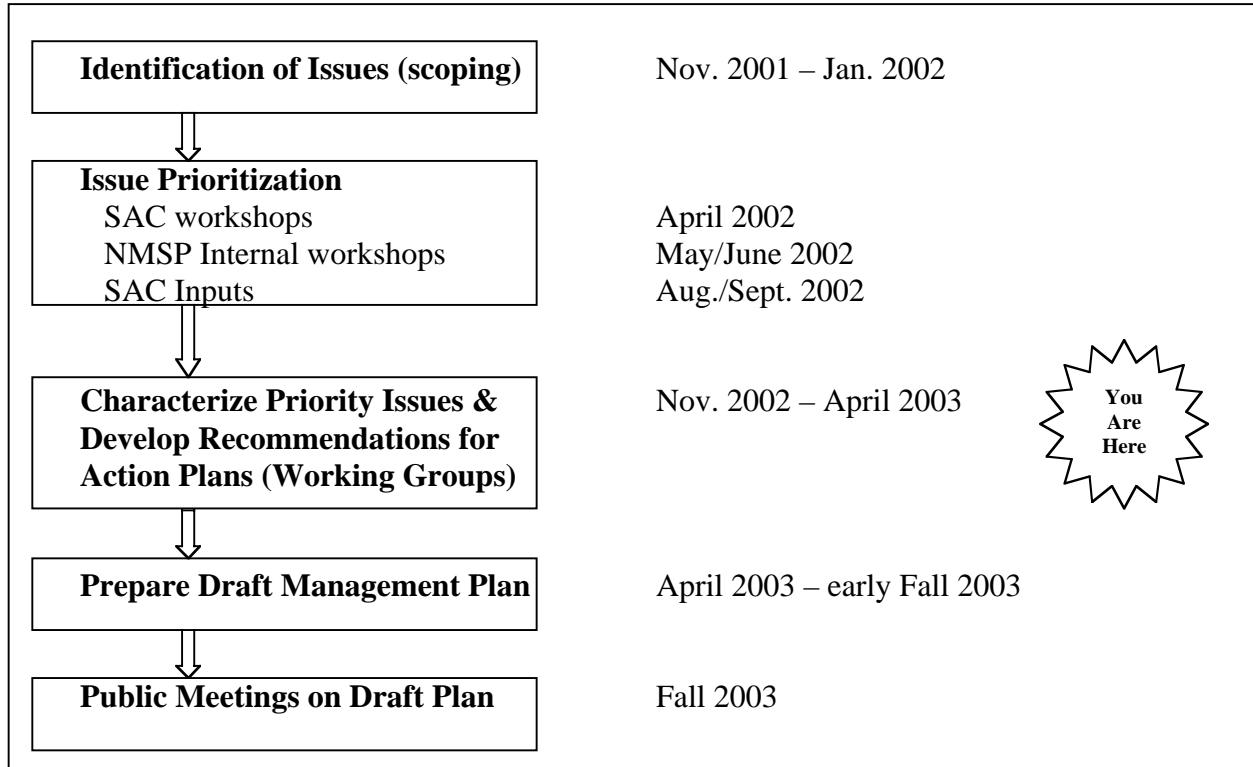
The NMSP selected the issues to be addressed in the joint management plan review following and extensive public process of scoping and issue prioritization. Twenty scoping meetings were held between November 2001 and January 2002, and over 12,500 comments were received. A *Summary Scoping Report (February 25, 2002)* was used by the SACs to select their highest priority issues. Through a series of workshops in April 2002, SAC members provided feedback and recommendations on the resource issues to be addressed. The results from the workshops were published, *Report on Sanctuary Advisory Council Prioritization Workshops (May 13, 2002)*. Based on input from the SACs, a *Selection of Priority Issues to be addressed in the Joint Management Plan Review* was presented in July 2002. These documents are available for viewing on the JMPR website (<http://www.sanctuaries.nos.noaa.gov/jointplan/>).

**Next Steps**

This work plan will provide a guide to develop the management plan over the next year. The next step is to establish and convene the SAC "working groups" and staff "internal teams". These working groups and teams will be provided with direction, descriptions of the issues, and what is expected in terms of a product or recommendation from the group. The action plans will be presented to the SACs when the internal teams and working groups complete them. JMPR staff will assemble the specific action plans for the draft management plan; develop the supporting environmental and socioeconomic documents; and release the draft management plan(s) for public review.

**Management Plan Development Steps**

**Dates**



## Cross-Cutting Issue Work Plan

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### Cross-Cutting Introduction

The JMSP involves the simultaneous review of three adjacent sanctuaries in northern-central California. Many of the key issues raised during the public scoping meetings apply to two or more sanctuaries. Likewise, many of the sanctuary users, State and Federal agencies, and stakeholder groups have interests in more than one sanctuary. Broadly defined, those issues that apply to two or more sanctuaries are considered cross-cutting. However, not all issues that are cross-cutting in nature will be addressed as cross-cutting. The NMSP recognizes that the complexity, time, and resources required to address cross-cutting issues greatly increase as the number of sites increase. In addition, some of the actual strategies for addressing cross-cutting issues may be better accomplished at an individual sanctuary, which may establish a model for other sanctuaries to adopt. In order to increase cooperation and coordination among the sites, the NMSP has identified the following five priority issues as cross-cutting:

- Administration (internal team)
  - Boundary Issues (internal team)
  - Community Outreach (working group)
  - Cultural Resources (working group)
  - Ecosystem Monitoring (working group)
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### Issue Name: Administration

#### Issue Description:

Cordell Bank, Gulf of the Farallones and Monterey Bay National Marine Sanctuaries are located adjacent to one another along a 350-mile stretch of the north-central California coast. All managed by the same program, they share many of the same resources and issues, and have some overlapping interest and user groups. There are many opportunities for these sites to work cooperatively, share assets, and address resource management issues in a coordinated manner.

The three sanctuaries continue to coordinate on many important resource management issues, such as oil spills and volunteer monitoring. However, each site is, for the most part, managed independently of each other. The sanctuaries have separate administrative staffs, Sanctuary Advisory Councils, education, research and resource protection programs.

The NMSP has placed a high priority on developing mechanisms and strategies for improved management, particularly as it relates to education, research, regulations, and enforcement. Additionally, there is a need to develop an overarching mechanism to address current and emerging cross-cutting issues within the program. The goal of this team is to develop a strategy for these three sites to operate as three complementary components of a national system.

#### Internal Team Contact:

Brady Phillips, NMSP, 301-713-3125 x204, [Brady.Phillips@noaa.gov](mailto:Brady.Phillips@noaa.gov)

#### Internal Team Participants:

Ed Lindelof, NMSP

Ed Ueber, GF/CBNMS

Roberta Cordera, CINMS SAC (Facilitator)

Bill Douros, MBNMS

## Cross-Cutting Issue Work Plan

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Maria Brown, GFNMS  
Anne Walton, CB/GFNMS  
Julie Barrow, NMSP

Sean Morton, MBNMS  
Dan Howard, CBNMS

**Internal Team Meetings:** The facilitator will meet individually with the GF/CB manger and the MB superintendent to determine some of the opportunities and obstacles to cooperative management. She will then broaden her inquiry to other staff at each of the 3 sanctuaries. Following this analysis the team will meet to determine the range of specific strategies to address this management plan.

**Timeline:** Start: December  
Complete: April

### Outcomes and Products:

- Develop procedures and protocols on how the sites can better protect sanctuary resources through coordinated education, research and resource protection (including enforcement) programs
- Develop strategies to maximize administrative efficiency

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### Issue Name: Boundary Issues

#### Issue Description:

##### Issue I:

Since designation in 1992, the northern portion of the Monterey Bay National Marine Sanctuary has been under co-management with the Gulf of the Farallones National Marine Sanctuary. Despite continued efforts to implement a shared management structure, this arrangement has resulted in confusion with some communities as to which site is ultimately responsible for managing and protecting the resources in this area. The NMSP received many comments throughout the public scoping period and the SAC prioritization workshops requesting that the program resolve the ongoing northern MBNMS/southern GFNMS boundary issue in the joint management plan review (JMPR).

Phase 1: The National Marine Sanctuary Program will first assemble an internal team of NMSP staff to analyze the administrative, ecological, physical, and socioeconomic factors and determine whether there is a need to modify the existing sanctuary boundaries. Other administration and management scenarios between the Monterey Bay and Gulf of the Farallones NMSs will also be explored. The analysis will provide a basis for determining a range of boundary or administrative structures that will promote maximum efficiency in engaging local communities and protecting sanctuary resources.

Phase 2: Upon the completion of the internal team's analysis and recommendations, both of the GFNMS and MBNMS SAC's will be presented with the results and given the opportunity to provide input on the recommendations and alternatives prior to any final decision being made.

## Cross-Cutting Issue Work Plan

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### Issue 2:

In conjunction with the GF/MB boundary issue, the internal team will review the existing San Francisco/Pacifica exemption area in the northern region of the MBNMS. This area was not included by NOAA as part of the original MBNMS Sanctuary designation in 1992 due to concerns regarding contamination from the San Francisco Municipal combined sewer overflow discharge plume. The internal team will provide an analysis of the issue and determine whether the area should be included for Sanctuary protection.

### Internal Team Contact:

Mitchell Tartt, NMSP, 301-713-3125 x 184, e-mail Mitchell.Tartt@noaa.gov

### Team Participants:

Ed Ueber, GFNMS	Anne Walton, GF/CBNMS
Maria Brown, GFNMS	Dave Lott, NMSP
Bill Douros, MBNMS	Sean Morton, MBNMS
Dan Basta, NMSP	Ed Lindelof, NMSP
Brady Phillips, NMSP	Julie Barrow, NMSP
External ecosystem/biogeographic experts (1-2)	

### Working Group Meetings: TBD

**Timeline:** Start: Preliminary assessment and analytical framework development – December. Internal team meetings initiated in January, 2003.  
Complete: March 30

### Outcomes and Products:

- Define criteria to evaluate boundary issues
- Develop a framework to guide development and selection of boundary alternatives
- Define boundary and administration alternatives and justification for each alternative
- Identify a preferred alternative

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## Issue Name: Community Outreach

### Issue Description:

Outreach efforts will focus on building public awareness and understanding the significance of the sanctuaries and the need to protect their cultural and natural resources. Outreach efforts are primarily conducted by staff or SAC members as part resource protection, education and research programs. Rather than identifying target audiences, outreach efforts will be focused on reaching a broad spectrum of the public through venues such as visitor centers, kiosks, signage and community events such as Ocean Fest, Earth Day celebrations and open houses.

Currently, the three sanctuaries lack a coordinated outreach program that effectively highlights the national system or specific program activities across all three sites. Such an effort will involve all three sites working towards better coordination and collaboration. The three sites have expressed a desire to develop a cross-cutting outreach action plan as it supports the broader

## Cross-Cutting Issue Work Plan

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NMSP goal in developing public awareness of the Sanctuaries. To accomplish this, the sites need to implement regional outreach strategies, and marketing and media exposure efforts while continuing to focus on site-specific needs and targeted audiences.

### Working Group Contact:

Julie Barrow, NMSP, 650-712-8909, Julie.Barrow@noaa.gov

### Working Group Participants:

Rachel Saunders, MBNMS	NMSP Natl. Education Coordinator (TBD)
Jennifer Stock, CBNMS	
GFNMS Edu Coordinator (TBD)	MBNMS BTAP Member
Susan Andres, FMSA	Amity Wood, FMSA
SIMoN Outreach Coord.	Dawn Hayes, MBNMS
Joe Smith, CBNMS SAC	Dennis Long, MBSF
Bob Breen, GFNMS SAC	Deborah Streeter, MBNMS SAC
Brenda Donald, GFNMS SAC	Frank Degnan, MBNMS SAC
Mark Dowie, GFNMS SAC	Susan Danielson, Save Our Shores
Milos Radakovich, BayNet	Dave Schaechtele, State Parks

**Timeline:** Start: November  
Complete: March 31

Dec: Prepare an outline of the action plan and present it to key groups such as the three SAC's, the MBNMS RAP, SEP, CWG, BTAP, for comment and feedback.

Feb: Based on the feedback from the SAC's, develop a preliminary draft and present to these groups for comment.

April: Prepare a final action plan for inclusion in the draft management plans.

### Outcomes and Products:

- Develop a regional strategic community outreach plan that includes:
- Outreach needs assessment
- Identification of topics to be covered
- Identification of target audiences
- Strategies to communicate key messages including media opportunities
- Strategies to ensure coordination across all three sites

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## Issue Name: Cultural Resources

### Issue Description:

Submerged cultural resources are an important part of our nation's maritime heritage and their protection is a mandate of the National Marine Sanctuaries Act. The Sanctuary Program has attempted to fully characterize these resources by assembling a database of known shipwrecks along the West Coast. The NMSP needs to develop strategies to define, identify, locate, characterize, and protect the cultural resources; shipwrecks, archeological sites and artifacts, within its boundaries. A component of the submerged cultural resources program will be to address potential resource threats from sunken vessels (e.g. recent oil releases from the *Luckenbach*, or potential releases from the *Montebello*).

## Cross-Cutting Issue Work Plan

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### Working Group Contact:

Bob Schwemmer, CINMS , (805) 9667107 x466, email [Robert.Schwemmer@noaa.gov](mailto:Robert.Schwemmer@noaa.gov)

### Working Group Participation:

Bruce Terrell, NMSP

Jackie Hilterman FMSA

Brad Damitz, MBNMS

Don Morris, NPS (retired)

Gordon White, PRNS

Erica Burton, MBNMS

Ruth Howell, GFNMS

Tim Thomas, Monterey Maritime Museum

### Working Group Meetings: TBD

**Timeline:** Start: December

Complete: April

### Outcomes and Products:

- Develop strategies to identify, locate and characterize cultural resources (vessels, archaeological sites & artifacts)
- Identify shipwrecks that may pose threats to marine resources (oil leaks, hazards, etc.)
- Develop strategies to interpret cultural resources

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## Issue Name: Ecosystem Monitoring

### Issue Description:

Effective resource management requires statistically robust and relevant data sets from long-term monitoring to evaluate status and trends of natural resources, physical properties, and human activities. Monitoring programs should provide information to assess environmental change with respect to management issues implemented by the sanctuary. Data from monitoring programs should also be used to develop predictive models to better anticipate change or impacts over time.

Each of the sanctuaries participating in the joint management plan review have ongoing monitoring activities designed to address resource management concerns that have been identified since site designation. GFNMS is involved in several marine mammal and seabird monitoring programs, as well as shoreline, intertidal, coastal ecology, and restoration monitoring. CBNMS shares marine mammal and seabird monitoring efforts with the GFNMS. CBNMS also focuses monitoring activities on zooplankton, and the bottom community associated with the Bank and adjacent soft bottom habitats. With the support of many partners, MBNMS has recently designed and committed to the implementation of a Sanctuary Integrated Monitoring Network (SIMoN). This program creates a stable network of ecosystem and issue-based monitoring data to address a critical need for long-term evaluation of the region and resources.

The joint management plan review process provides a unique opportunity to enhance management-based monitoring strategies for three individual sanctuaries and design an ecosystem monitoring network strategy to coordinate targeted activities among sites. Ecosystem monitoring efforts may address management issues that transcend the boundaries of an individual sanctuary. The strategy to address these shared concerns will form the basis for a



## Cross-Cutting Issue Work Plan

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cross-cutting action plan to coordinate monitoring efforts, institutional partners, and volunteer activities among the sanctuaries. This approach should improve efficiency and effectiveness of monitoring activities and provide more comprehensive information to resource managers involved in decision-making across all three sites.

In the past year the National Marine Sanctuary System (NMSS) has undertaken a process to develop a framework for system-wide monitoring. The framework is intended to provide a standardized approach to conduct monitoring activities necessary to address their management concerns. The framework also serves as a tool to enable systematic reporting and promote monitoring coordination among sanctuaries. The approach for system-wide monitoring will be coordinated with the joint management plan review process and the development of site-specific, management-based monitoring strategies and an ecosystem monitoring network strategy for activities at all sanctuaries.

### **Working Group Contact:**

Kim Benson, NMSP, 301-713-3125 x 183, Kim.Benson@noaa.gov

### **Working Group Participants:**

Steve Gittings, NMSP	Lynn Takata, NMSP
Dale Roberts, CBNMS	Josh Churchman, CBNMS SAC
Jan Roletto, GFNMS	Bill McMillon, CBNMS SAC,
Gwen Heistand, GFNMS SAC	James Kelley, GFNMS SAC,
Bob Wilson GFNMS SAC	Jamie Alonzo, MBNMS SAC
Andrew DeVogelaere, MBNMS	Chris Harrold, MBNMS SAC
Steve Lonhart, MBNMS	Other pertinent regional experts (TBD)
Shannon Lyday, FMSA	Rebecca Goldman, ESNERR
Pete Raimondi, UCSC/PISCO	Mark Carr, UCSC/PISCO
Don Morris, NPS (retired)	Baldo Marinovich, UC Santa Cruz
Bruce Nyden, BML	

### **Working Group Meetings:**

Dec-Jan 2003: Subgroup meetings—Assess monitoring activities and requirements for each sanctuary

February 2003: Working Group Meeting—Identify targeted areas for coordination and strategy development for ecosystem monitoring network

### **Related Activities:**

Oct./Nov. 2002	Pilot implementation of NMSP System-wide Monitoring Program (CINMS)
December 2002	NMSP System-wide Monitoring Expert Panel Meeting—Plan Implementation
March 2003	West Coast Sanctuary Volunteer Monitoring Workshop

**Timeline:** Start: December  
Complete: May

### **Outcomes and Products:**

- Develop site-specific, management based monitoring strategies for each sanctuary
- Implement plan for SIMoN at MBNMS

## **Cross-Cutting Issue Work Plan**

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- Develop ecosystem monitoring network strategy for targeted regional coordination
- Develop strategies to report and interpret monitoring data



## Cordell Bank Issue Work Plan

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### Issue Name: Ecosystem Protection

#### Issue Description:

Many resource management agencies focus their management efforts on a single species, a single resource management issue or a specific habitat. The National Marine Sanctuary Program is unique among resource management agencies in that it takes an ecosystem approach. Sanctuaries don't have the resources to do this on their own, so they often coordinate and partner with other agencies to build comprehensive ecosystem protection plans.

The National Marine Sanctuary Program defines ecosystem management as a process that "should protect and restore ecological components, functions and structures according to socially defined values and scientific information, in an integrated, holistic manner". Ecosystems include habitat structure, species assemblages and ecological processes. At CBNMS, the combination of ocean currents and undersea topography support a rich and diverse community on and around the bank. This submerged island comes within 120 feet of the ocean's surface and is covered in sedentary invertebrates. The area is a destination for migratory whales, seabirds and fishes.

Protection of living marine resources and habitats is the highest priority for CBNMS. An ecosystem-based approach is the foundation of CBNMS' management plan, which is established from the best available science, programs and regulations to carry out ecosystem protection. CBNMS uses education, outreach, research, monitoring, and regulations to address the priority resource management issues identified in this work plan as well as specific issues related to Ecosystem Protection.

CBNMS will use education, outreach, research, monitoring, and regulations to address the priority resource management issues identified in this work plan as well as specific issues related to Ecosystem Protection. Although all issues identified in this work plan fall under the category of "Ecosystem Protection", the two issues that have been highlighted below will particularly help CBNMS move towards better ecosystem management.

#### **Issue I: Evaluate the need for boundary modifications to increase biodiversity protection.**

Sanctuaries are designed to protect areas of special significance. During the designation process for each National Marine Sanctuary, a range of boundary options are proposed, and modified, before a final boundary is chosen. The management plan review process provides an opportunity to re-examine, evaluate, and, as appropriate, redefine a sanctuary's boundary. Areas to the north of the current CBNMS boundary, particularly Bodega Canyon, will be evaluated.

#### **Issue I: Internal Team Contact:**

Dan Howard, phone: 415-663-0314, email: dan.howard@noaa.gov

#### **Issue I: Internal Team Participants:**

Jan Roletto, GFNMS

Jenny Stock, CBNMS

Anne Walton, GFNMS/CBNMS

**Issue I: Timeline:** Start: February  
Complete: June

## Cordell Bank Issue Work Plan

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### **Issue I: Outcomes/Products:**

- Develop a framework for evaluating boundary change
- Synthesize, spatialize and analyze physical, geological, biological and human activity
- Develop feasibility study
- Present rationale for action proposal

### **Issue II: Site-specific fishing issues.**

More than 180 species of fish have been identified in CBNMS. Commercial fisheries generally target rockfish, flatfish, salmonoids, and albacore tuna. Most of the private boats and charter vessels that fish CBNMS are from Bodega Bay. Rough ocean conditions often prevent smaller recreational boats from regularly accessing Cordell Bank. Gear types used in CBNMS include: hook and line, long lines, bottom trawl and mid-water trawl. Management of commercial and recreational fisheries in California is the responsibility of the California Department of Fish and Game (DFG) in State waters (0-3 nautical miles), and the Pacific Fishery Management Council (PFMC in Federal waters (3 to 200 miles) (CBNMS is entirely in Federal waters). The NMSP does not manage specific fisheries, but it does protect the entire sanctuary ecosystem and has the authority to manage human uses that may impact sanctuary resources.

The working group will review the NMSP policy regarding zoning and clarify when and how the program may consider the use of tools such as marine reserves to address specific resource management issues. The working group may determine if there is a need to address certain issues immediately or if additional site-specific working groups will be required, over a longer timeframe, to address specific local fishery issues.

### **Issue II: Working Group Contact:**

Ed Ueber, 415-561-6622, email:ed.ueber@noaa.gov

### **Issue II: Working Group Participants:**

Dan Howard, CBNMS  
Jenny Stock, CBNMS  
Anne Walton, GFNMS  
Josh Churchman, CBNMS SAC  
Brian Mulvey, CBNMS SAC  
Richard Powers, CBNMS SAC  
Pietro Paravano, Fisherman  
Tom Baty

**Issue II: Timeline:** Start: January  
Complete: June

### **Issue II: Outcomes /Products**

- Develop a framework for addressing impacts from specific fishing activities through the use of tools such as education, research, zonal management and policy
- Profile impacts on CBNMS from individual fishing activities, supported by the best scientific information available
- Make recommendation on whether each specific fishing activity can or should be addressed immediately, or a stakeholder working group should be formed

## **Cordell Bank Issue Work Plan**

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- If an action is to be taken immediately, provide a recommendation on the appropriate tools to be used including: education and outreach, research and monitoring, policy development, zonal management and/or proposed regulatory action
  - If a long-term stakeholder working group is to be formed, make recommendation on participants, timeline, goals and objectives, proposed outcome/products
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### **Issue Name: Education**

#### **Issue Description:**

Cordell Bank will be working to develop a long-term education strategy to raise the public's awareness about the local and regional marine environment and encourage public involvement in the Sanctuary.

Education programs are designed to enhance public awareness and understanding of the Sanctuary and build stewards to take on the responsibility of protecting these special places. The development of effective and coordinated education programs is a priority for all three sanctuaries. These education programs will complement the broad-based cross-cutting community outreach efforts by focusing on targeted classroom audiences such as middle grades, high schools, summer camp programs and multilingual settings.

CBNMS will use education as a resource management tool to address specific priority resource management issues identified in the management plan review process. Education is essential to achieving many of the Sanctuary's management objectives, and is used to both complement and promote other Sanctuary programs such as research, monitoring and enforcement.

#### **Working Group Contact:**

Jenny Stock, phone: 415-663-1397 email: jennifer.stock@noaa.gov

#### **Working Group Participants:**

Jennifer Saltzman, FMSA  
Paul Wong, GFNMS  
Maria Brown, GFNMS  
Doreen Moser, CBNMS SAC  
Bob Breen, GFNMS SAC  
Gwen Heistand, GFNMS SAC  
Candice Brown, The Exploratorium  
Clark Soave, Washington High School  
Aly Baltrus, PRNS

#### **Working Group Outcomes/Products:**

- Identify geographic outreach base
- Identify target audiences
- Review GFNMS current programs and make determination on: which could be developed as a partnership between sanctuaries; which programs could be modified for CBNMS' needs; and what new programs could be coordinated between sanctuaries
- Develop long-term coordinated education strategy

## **Cordell Bank Issue Work Plan**

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**Timeline:** Start: December  
Complete: April

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### **Issue Name: Partnerships with Community Groups**

#### **Issue Description:**

Sanctuaries cannot function without the support of community partnerships. All sanctuaries work with Sanctuary Advisory Councils, community groups and agencies to provide support in reaching out to the community, and building stewardship.

A model that CBNMS would like the community to use is the Farallones Marine Sanctuary Association (FMSA). The mission of FMSA is to protect the wildlife and habitats managed by Gulf of the Farallones National Marine Sanctuary through promoting discovery, education and conservation. In 2000, FMSA coordinated more than 250 volunteers (38,500 volunteer hours) and provided more than \$811,339 in programmatic support to GFNMS. As a nonprofit organization, much of FMSA's work is undertaken with contributions from individuals, corporations, and foundations.

The Farallones National Marine Sanctuary Association works in coordination with the Gulf of the Farallones Sanctuary to enlist volunteers to monitor and protect fragile marine habitats; develop educational programs; offer Sanctuary field adventures and tours; publish newsletters; and create visitor centers, educational materials, and exhibits to enhance the public's appreciation and enjoyment of the Sanctuary. Projects and programs include: Beach Watch, Emergency Response Planning, Beach Cleanups, California Harbor Seal Census and Monitoring Disturbance to Harbor Seals. This relationship between FMSA and GFNMS has been so successful that CBNMS would like to develop similar community partnerships to support new program development.

#### **Working Group Contact:**

Dan Howard, phone: 415-663-0314, email: dan.howard@noaa.gov

#### **Working Group Participants:**

Jennifer Stock, CBNMS  
Ruth Howell, GFNMS/CBNMS  
Doreen Moser, CBNMS SAC  
Joe Smith, CBNMS SAC  
Candice Brown, The Exploratorium  
Gary Knoblock, PRNSA  
Christine Fontaine, PRNS

**Timeline:** Start: February  
Complete: June

#### **Working Group Outcomes /Products:**

- Identify community partners
- Identify the SAC's role in reaching out to their constituency and the community at large
- Develop community outreach action plan

## **Cordell Bank Issue Work Plan**

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- Identify potential partners, funding sources and contacts
  - Build framework and timeline for establishing a fully functioning CBNMS foundation
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### **Issue Name: Research and Monitoring**

#### **Issue Description:**

Although research and monitoring activities have been the cornerstone of CBNMS, a formalized long-term plan that highlights the importance of these activities needs to be developed for the site. Research and monitoring will continue to be a high priority and CBNMS staff will develop strong education and outreach programs to support these efforts. There are two specific areas the working groups for research and monitoring will focus on: 1) development of a coordinated and integrated research and monitoring program for CBNMS, and 2) explore the possibility of developing a specific water quality program that focuses on issues and impacts related to being an offshore site.

#### **Issue I: Research and Monitoring.**

The goal of Sanctuary research and monitoring activities is to improve the Sanctuary's understanding of the Cordell Bank environment and to resolve specific resource management issues. Specific objectives for research and monitoring programs at CBNMS include: gathering baseline data on the physical, chemical and biological oceanography of the Sanctuary; identifying impacts on the marine resources from human activities; incorporation of research and monitoring results into CBNMS' outreach and education programs; and encouraging information exchange on the resources among agencies and institutions. Current research areas include: bathymetric studies; zooplankton production studies including investigations of krill abundance; and studies investigating benthic ecology.

#### **Issue I: What are the regional or national implications?**

CBNMS is unique among National Marine Sanctuaries because of its focus on research and monitoring.

#### **Issue I: Working Group Contact:**

Dale Roberts, phone: 415-663-0314, email: dale.roberts@noaa.gov

#### **Issue I: Working Group Participants:**

Dan Howard, CBNMS Staff  
Daniel Cohen, CBNMS SAC  
Carol Keiper, CBNMS SAC  
Tom Lambert, CBNMS SAC  
Richard Powers, CBNMS SAC  
Sarah Allen, PRNS  
Bob Van Syoc, CA Academy of Sciences  
Tara Anderson, NMFS

**Issue I: Timeline:**     Start: February  
                                  Complete: June

#### **Issue I: Working Group Outcome/Products:**

- Develop an administrative framework to support CBNMS' research focus



## Cordell Bank Issue Work Plan

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- Evaluate current research and monitoring programs
- Evaluate education and outreach programs and how they complement research
- Evaluate current regulations and permitting process in regards to research

### **Issue II: Water Quality.**

Although one of the most significant features of Cordell Bank is good water quality, the multitude of land-based and at-sea activities that occur in around the Sanctuary remain a threat to Sanctuary water quality and resources.

In the 1960s and 1970s, regional industrial facilities discharged DDT and PCBs into coastal waters. While levels of persistent organic pollutants may be relatively low at the point of discharge, effects may be significant over the reproductive life of the affected marine organisms. High levels of several pesticides have been found in animal tissues, including Steller sea lions off of Cordell Bank (Gross et al. (Gress et al. 1971).

The offshore environment around CBNMS is subject to the threats of oil spills, and chronic releases of oil and other toxic materials. Substantial volumes of crude oil and petroleum products are transported off the California coast from Alaska, from foreign countries and between California production sites. During the past 30 years, there have been 14 vessel oil spills greater than 20,000 gallons along the Pacific coast (excluding spills in harbors and bays) including: oil tanker *M/V Puerto Rican* (1984) exploded and later broke apart releasing 1.5 million gallons of oil off of San Francisco; barge *Apex Houston* (1986) released an estimated 10,000 to 20,000 gallons of oil; *Cape Mohican* (1996) released approximately 50,000 gallons into San Francisco Bay and coastal waters.

Although tankers carry the majority of the crude oil, other vessels carry and use large amounts of bunker fuel, a heavy oil similar to crude oil. Fuel capacity per vessel is approximately 10,000 to 1.2 million gallons. Although the number of spills is small, the potential impacts of bunker fuel are significant given the number of vessels, the potential size of the spill, the type of oil and oceanographic currents off the coast.

### **Issue II: Working Group Contact:**

Dale Roberts, phone: 415-663-0314, email: Dale.Roberts@noaa.gov

### **Issue II: Working Group Participants:**

Jan Roletto, GFNMS  
Ruth Howell, GFNMS/CBNMS  
Kathy Soave, CB SAC  
Brian Mulvey, GF SAC  
Jack Gregg, CA Coastal Commission

**Issue II: Timeline:** Start: December  
Complete: May

### **Issue II: Working Group Outcome/Products:**

- Inventory and evaluate existing offshore water quality programs that collect data in and around CBNMS to determine data gaps

## **Cordell Bank Issue Work Plan**

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- Develop framework for a long-term water quality monitoring program including the measurement of turbidity and water temperature
- Inventory and evaluate existing regional/local water quality education and outreach programs
- Develop framework for water quality education and outreach program

## **Gulf of the Farallones Site Specific Issues**

### **Issue Name: Administration**

#### **Issue Description:**

In order for the GFNMS to build a management plan that is effective in addressing the priority site-specific and cross-cutting resource management issues as identified through the management plan review process, GFNMS will need to strengthen its infrastructure by adding staff and financial resources.

Since 1990, GFNMS has grown from a staff of three with a budget of under \$300,000 to a current staff of five with a budget of \$953,000. Until 1998, GFNMS office managed the GFNMS, CBNMS and the northern portion of MBNMS.

The National Marine Sanctuary Program (NMSP) provides oversight and coordination among the thirteen National Marine Sanctuaries, taking responsibility for insuring the management plan prepared for each sanctuary is coordinated and consistent with the National Marine Sanctuary Act, while developing a general budget and determining expenditures for program development, operating costs and staffing. On an annual basis, based on Congressional appropriations, the NMSP reviews and adjusts funding priorities and requirements to reflect resource priorities in response to needs.

#### **Internal Team Contact:**

Maria Brown, phone: 415-561-6622, email: maria.brown@noaa.gov

#### **Internal Team Participants:**

Susan Andres, FMSA

Anne Walton, GFNMS/CBNMS

**Timeline:** Start: December  
Complete: March

#### **Internal Team Outcomes/Products:**

Based on the recommendations from the working groups for addressing the priority resource management issues, the Sanctuary will:

- Review existing staffing plan
- Make recommendation on new staffing plan
- Review and revise program area plans
- Review and revise priority budgetary and staffing needs

## Gulf of the Farallones Issue Work Plan

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### Issue Name: Ecosystem Protection

#### Issue Description:

Many resource management agencies focus their management efforts on a single species, a single resource management issue or a specific habitat. The National Marine Sanctuary Program is unique among resource management agencies in that it takes an ecosystem approach to marine resource management. Sanctuaries do not have the resources to do this on their own, so they often coordinate and partner with other agencies to build comprehensive ecosystem protection plans.

The National Marine Sanctuary Program defines ecosystem management as a process that "should protect and restore ecological components, functions and structures according to socially defined values and scientific information, in an integrated, holistic manner". Ecosystems include habitat structure, species assemblages and ecological processes. GFNMS contains nursery and spawning grounds for commercially valuable fish and shellfish; is a feeding and/or breeding ground for 36 species of resident and transient marine mammals including the endangered Blue and Humpback whales and breeding area for one-fifth of California's Harbor Seals; is home to the largest congregation of breeding seabirds in the contiguous United States; and home to twenty-five threatened or endangered species. Protection of living marine resources and habitats is the highest priority for GFNMS, including those threatened and endangered species. An ecosystem-based approach, with the development of effective programs and regulations to carry out ecosystem protection, is the foundation of GFNMS management plan.

GFNMS will use education, outreach, research, monitoring, and regulations to address the priority resource management issues identified in this work plan as well as specific issues related to Ecosystem Protection. Although all issues identified in this work plan fall under the category of "Ecosystem Protection", the four issues highlighted below will particularly help GFNMS move towards better ecosystem management.

#### **Issue I: Evaluate the need for boundary modifications to increase ecosystem protection.**

Sanctuaries are designed to protect areas of special significance. During the designation process for each National Marine Sanctuary, a range of boundary options are proposed, and modified, before a final boundary is chosen. The management plan review process provides an opportunity to re-examine, evaluate, and, as appropriate, redefine a sanctuary's boundary. Areas to the north and west of the current GFNMS boundary will be evaluated and considered.

#### **Issue I: Contact:**

Ed Ueber, phone: 415-561-6622, email: [ed.ueber@noaa.gov](mailto:ed.ueber@noaa.gov)

#### **Issue I: Internal Team Participants:**

Paul Wong, GFNMS

Jan Roletto, GFNMS

Anne Walton, GFNMS

**Issue I: Timeline:** Start: February  
Complete: June

## Gulf of the Farallones Issue Work Plan

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### **Issue I: Outcomes/Products:**

- Develop a framework for evaluating boundary change
- Synthesize, spatialize and analyze physical, geological, biological and human activity
- Develop feasibility study
- Present rationale for any proposed action

### **Issue II: New and emerging issues.**

With new technologies, increased access to the marine environment, and many land-based activities shifting to the open waters, GFNMS will need to continually identify, evaluate and prioritize new and emerging issues.

GFNMS will establish a process for addressing new and emerging issues, integrating them into the management plan and reprioritizing the management plan action plans to accommodate new activities, while considering the sites limited staff and financial resources. One of the first issues to be addressed will be to evaluate the need for a zonal management plan for GFNMS. Based on recommendations from the working groups looking at other resource management issues, it may be determined that additional zones are needed to address some of these issues. Zonal management may be used to separate conflicting uses or to add special protection to an area, habitat or living marine resource.

### **Issue II: Internal Team Contact:**

Anne Walton, phone: 415-561-6622, email: anne.walton@noaa.gov

### **Issue II: Internal Team Participants:**

Ruth Howell, CBNMS/GFNMS

### **Issue II: Timeframe:**

Start: January  
Complete: March

### **Issue II: Outcomes/Products:**

- Develop a framework for identifying new and emerging issues
- Develop a process for addressing new and emerging issues
- Develop a process for re-evaluating and adjusting priorities within the management plan to accommodate new and emerging issues

### **Issue III: Site-specific fishing issues.**

King salmon and rockfish are the primary target species for sport fishing in the GFNMS. The most important commercial harvests include Pacific herring, salmon, rockfish, albacore tuna and Dungeness crab. Most of the commercial catches harvested in GFNMS are landed in San Francisco, Bodega Bay, Oakland, Half Moon Bay, and Sausalito. Clam digging including gaper, Washington and littleneck clams is a popular activity. The tidal community includes a wide variety of invertebrates such as barnacles, limpets, black turban snails, mussels, sea anemones and urchins, which may be harvested as well. Gear types used in the GFNMS include: hook and line, long lines, gill nets, seines, traps, bottom trawlers and mid-water trawlers. Management of commercial and recreational fisheries in California is the responsibility of the California

## **Gulf of the Farallones Issue Work Plan**

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Department of Fish and Game (DFG) in State waters (0-3 nautical miles), and the Pacific Fishery Management Council (PFMC) in Federal waters (3 to 200 miles). In contrast, the NMSP does not manage fisheries but it does have a mandate to protect the entire sanctuary ecosystem and the authority to manage human uses that may impact sanctuary resources.

The working group will review the NMSP policy regarding zoning and clarify when and how the program may consider the use of tools such as marine reserves to address specific resource management issues. The working group may determine if there is a need to address certain issues immediately or if additional site-specific working groups will be required, over a longer timeframe, to address specific local fishery issues.

### **Issue III: Working Group Contact:**

Ed Ueber, phone: 415-561-6622, email: ed.ueber@noaa.gov

### **Issue III: Working Group Participants:**

Anne Walton, GFNMS/CBNMS

Paul Wong, GFNMS

Richard Charter, GFNMS SAC

Barbara Emley, GFNMS SAC

Karen Reyna, GFNMS SAC

Pietro Paravano, Fisherman

**Issue III: Timeframe:**           Start: December  
  Complete: June

### **Issue III: Outcomes/Products:**

- Develop a framework for addressing impacts from specific fishing activities through the use of tools such as education, research, zonal management and policy
- Profile impacts on GFNMS from individual fishing activities, supported by the best scientific information available
- Make recommendation on whether each specific fishing activity can or should be addressed immediately, or a stakeholder working group should be formed
- If an action is to be taken immediately, provide a recommendation on the appropriate tools to be used including: education and outreach, research and monitoring, policy development, zonal management and/or proposed regulatory action
- If a long-term stakeholder working group is to be formed, make recommendation on participants, timeline, goals and objectives, proposed outcome/products

### **Issue IV: Radioactive Waste Dump Site**

Research results to date are incomplete on the impacts on the marine ecosystem from radioactive leakage. Further studies must be done to fully evaluate the possible hazards from radioactivity. Significant public fear and uncertainty about the contamination from leaking barrels continues particularly since major commercial fishing, sport fishing and other recreational activities take place in the area in and above the dump site.

## **Gulf of the Farallones Issue Work Plan**

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The area referred to as the “Farallon Islands Radioactive Waste Dump” (FIRWD) is where approximately 47,800 barrels of low-level radioactive waste were dumped between 1946 and 1970. Although the containers were to be dumped at three designated sites, they are actually strewn over an area of 540 square miles in depths ranging from 300 to more than 6,000 feet, within the Gulf of the Farallones National Marine Sanctuary (USGS 2001).

In the early 1990’s, USGS and GFNMS surveyed part of the waste dump (80 square miles) using side scan sonar to identify objects they believed to be radioactive waste containers. In 1994, the GFNMS used Navy submersibles to confirm the identification of the barrels. Visual observations indicated that the barrels were deteriorated. In 1998, USGS, British Geological Survey (BGS) and GFNMS investigated regional-scale levels of radioactivity in sea floor sediments of the Gulf. A towed seabed gamma-ray spectrometer system (called “EEL” because of its appearance), was used to make continuous measurements of radioactivity along several track lines at depths between 300 and 3,000 feet, in some cases reaching 4,900 feet. Measurements made by the EEL and laboratory analyses of sediment samples indicate low levels of artificial radionuclides (radioactive atoms that do not occur naturally, but are produced by nuclear reactions). The data do not suggest any significant elevation of radionuclide levels on a regional scale (USGS 2001).

To date, only 15% of the Farallones Radioactive Waste Dump has been mapped to identify location of barrels, and 10% of the area sampled for radionuclide concentrations. The areas that have been studied represent the shallower portions of the site. Deeper water areas, where the majority of containers are believed to reside, remain virtually unstudied, both in terms of location of barrels and radionuclide content of the sediments making evaluation of potential hazards from radiation or contamination nearly impossible to assess (USGS 2001).

### **Issue IV: What are the regional or national implications?**

Channel Islands Sanctuary does have three waste dumpsites (including radioactive and/or munitions) in their study area for the management plan review process. There is also a radioactive waste dumpsite in Boston Harbor, adjacent to Stellwagen Bank Sanctuary. Gulf of the Farallones National Marine Sanctuary also has munition dumpsites within its boundaries.

### **Issue IV: Has this issue been dealt with at another place or by another agency?**

This issue is not being dealt with by any other National Marine Sanctuary. Other agencies that have been directly or indirectly involved with the FIRWD site include: U.S. Army Corps of Engineers, U.S. Geological Survey (USGS), Environmental Protection Agency (EPA), and California Dept. of Health Services. These agencies have formed a working group to inventory current information on the radioactive waste dumpsite, identify research data gaps and evaluate next steps.

### **Issue IV: Internal Team Contact:**

Ed Ueber, phone: 415-561-6622, email: ed.ueber@noaa.gov

### **Issue IV: Internal Team Participants:**

Mary Jane Schramm, GFNMS

Mark Dowie, GFNMS

## Gulf of the Farallones Issue Work Plan

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### **Issue IV: Stakeholders directly affected by issue:**

Users groups that may be impacted (actual and/or perceived) by the radioactive waste dumpsite:

- commercial and recreational fishing industry (has already experienced adverse impacts)
- recreational users

Agencies:

- USGS, EPA, U.S. Navy, Calif. Dept. of Transportation, Navy

Other stakeholders:

- public-at-large

### **Issue IV: Who has the mandate to resolve this issue?**

- The Environmental Protection Agency has the authority to declare the FIRWD a Super Fund Site.
- The California Dept. of Health is responsible for addressing health hazards to the citizens of California.
- The GFNMS will continue to work cooperatively with other agencies and institutions efforts as they pertain to FIRWD.

### **Issue IV: Internal Team Objective/Mandate:**

- Phase I: convene a group of agency scientists to evaluate status of radioactive waste dumpsite and make recommendation on roles and responsibilities of addressing some of the issues associated with FIRWD.
- Phase II: convene an internal working group of educators and outreach specialists who will develop the framework for a public outreach campaign to better educate the public on the status and potential threats of the FIRWD. This internal group will not begin until the Phase I working group has made it's recommendations.

**Issue IV: Timeline:** Phase I: To date, the working group has held one meeting. The target date for the working group to come to its conclusions and make recommendations on the status of the FIRWD is estimated to be approximately one year from now. Phase II: the internal team will not begin it's work until a recommendation has been made by the Phase I working group (which will be outside the timeframe of these work plan working groups).

### **Issue IV: Internal Team Products:**

Phase II internal team will provide a framework for a public outreach campaign including:

- Clearly define the message to be communicated to the public about the status of the FIRWD including actual or potential threats to the living marine resources and humans
- Develop a list of audiences, both targeted and general public on which to focus outreach efforts



## **Gulf of the Farallones Issue Work Plan**

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- Develop a communications plan for systematically educating the public and target audiences, on a routine basis, about the status of the FIRWD
  - Identify partners, such as other agencies or institutions, to help develop outreach materials and participate in outreach efforts.
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### **Issue Name: Education**

#### **Issue Description:**

Gulf of the Farallones needs to develop a long-term education strategy to raise the public's awareness about the local and regional marine environment and encourage public involvement in the Sanctuary.

Education programs are designed to enhance public awareness and understanding of the Sanctuary, and build stewards to take on the responsibility of protecting these special places. The development of effective and coordinated education programs is a priority for all three sanctuaries. These education programs will complement the broad-based cross-cutting community outreach efforts by focusing on targeted classroom audiences such as middle grades, high schools, summer camp programs and multilingual settings.

The Farallones Marine Sanctuary Association (FMSA) works collaboratively with GFNMS to implement various education, interpretation and monitoring programs. GFNMS, in cooperation with FMSA, sponsors student summits, lectures, teacher trainings, summer camps and other education programs. FMSA is also supporting the development of a Coastal Education curriculum for high school students and multicultural programs with the San Francisco Department of Parks and Recreation and the California Coastal Commission.

GFNMS will use education as a resource management tool to address specific priority resource management issues identified in the management plan review process. Education is essential to achieving many of the Sanctuary's management objectives, and is used to both complement and promote other Sanctuary programs such as research, monitoring and enforcement.

#### **Working Group Contact:**

Paul Wong, phone: 415-561-6622, email: paul.b.wong@noaa.gov

#### **Working Group Participants:**

Jenny Stock, CBNMS  
Maria Brown, GFNMS  
Doreen Moser, CBNMS SAC  
Bob Breen, GFNMS SAC  
Gwen Heistand, GFNMS SAC  
Candice Brown, The Exploratorium  
Clark Soave, Washington High School  
Aly Baltrus, PRNS

## Gulf of the Farallones Issue Work Plan

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### Working Group Outcomes/Products:

- Develop long-term education strategy
- Coordinate with CBNMS on developing coordinated and complementary education programs

**Timeline:** Start: December  
Complete: May

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### Issue Name: Exotic/Invasive Species

#### Issue Description:

Introduced species have become established in some waters of the Gulf of the Farallones Sanctuary and have the potential to cause ecological and economic degradation to the affected coastal area. If preventative measures are not taken, further introduction and spread of exotic/invasive species will continue in and adjacent to the Sanctuary.

In the context of the West Coast National Marine Sanctuaries, exotic/invasive species in the marine environment are defined as a plant, invertebrate, fish, amphibian, bird, reptile or mammal whose natural zoogeographic range would not have included the waters of the Eastern Pacific without passive or active introduction through anthropogenic means. The Gulf of the Farallones National Marine Sanctuary is close to San Francisco Bay. San Francisco Bay is the most invaded aquatic ecosystem in the world, with over 255 introduced invertebrate species. According to the California Department of Fish and Game "invasive species are the number two threat to rare, threatened or endangered species nationwide, second only to habitat destruction". In general, exotic/invasive species in the marine environment alter species composition, threaten the abundance and/or diversity of native marine species, interfere with the ecosystem's function and disrupt commercial and recreational activities. Although several exotic/invasive species have been identified in the bays and estuaries throughout the range of the Gulf of the Farallones Sanctuary, a complete inventory is needed.

Nearshore discharge of ballast water is a common source of introduction of exotic/invasive species. Most organisms carried in ballast water are in the larval or diapause stage of their life cycle. Once discharged, estuaries and harbors provide optimal environments for the growth of these organisms. Viruses, bacteria and all major and most minor phyla have also been identified in ballast water. With over 45,000 commercial cargo ships (6,000 vessels entering or exiting San Francisco per year) transporting 10 billion tons of ballast water around the globe every year, the rate of introduced species will be certain to grow if efforts to prevent introductions do not occur.

Exotic/invasive species may also be transported on vessel hulls, rudders, propellers, intake screens, ballast pumps and sea chests. Animals purposely transported for research, restoration, education and aquarium activities also have the potential for accidental or intentional release into the marine environment. Other vectors for the spreading of exotic species include recreational equipment, debris, dredging and drilling equipment, dry docks and buoys.

## **Gulf of the Farallones Issue Work Plan**

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### **What are the regional or national implications?**

Exotic species introductions are a problem throughout coastal communities, and within all National Marine Sanctuaries. Within the National Marine Sanctuary System, the Florida Keys NMS does have a prohibition on introducing exotic species. The Channel Islands Sanctuary is also proposing a prohibition on the introduction of exotic species. To date, no National Marine Sanctuary has developed a comprehensive education and outreach program targeting industry and the public. GFNMS has an opportunity, working together with Washington Sea Grant, to develop an education/outreach model that could potentially be adopted by other sanctuaries.

### **Has this issue been dealt with at another place or by another agency?**

Federal Law:

In 1996, the Federal National Invasive Species Act was passed. It strengthened the 1990 law requiring open water exchange (OWE) of ballast water and mandatory ballast management plans and reporting. In spite of the law, during the first 12 months of the Act, only 20% of 58,000 vessels filed the mandatory reporting form and only 3,500 vessels reported a complete ballast change. The International Maritime Organization (IMO) recognized the lack of compliance and established a voluntary ballast water exchange program.

State Law:

In October 1999, AB703 was signed into California State law. The Bill requires mid-ocean ballast water exchange in waters more than 200 nautical miles from land and in water at least 2000 meters deep or retention of all ballast water on board the vessel for all U.S. and foreign vessels that enter California waters after operating outside the U.S. Exclusive Economic Zone. "Good Housekeeping" practices must be observed which includes the avoidance of discharge or uptake near marine sanctuaries, reserves, parks, coral reefs and other areas. Sanctuary prohibition on introducing or releasing an exotic species provides a greater impetus for vessels to comply with AB703 as the Sanctuary may enforce civil penalties up to \$119,000 per violation per day. The Sanctuary prohibition is applicable to Federal as well as State waters.

Fish and Code: Section 2116-2126 (illegal transportation of certain species)

Fish and Game Code: Section 6300-6306 (infected, diseased or parasitic fish, amphibia or aquatic plants)

Fish and Game Code: Section 6430-6433 (Ballast Water Management)

Fish and Game Code: Section 6440-6460 (control of aquatic nuisance plants)

Fish and Game Code: Section 8596-8598 (marine aquaria pet trade)

Public Resources Code: Section 71210-71213 (ballast water)

Public Resources Code: Section 71215 (Exotic Species Control Fund)

Hundreds of Federal programs, State organizations, international organizations and non-profit organizations have established databases, community outreach, monitoring, eradication and research and education programs. Additionally, industry is working on a number of physical, biological and chemical means of controlling organisms in ballast water.

### **What are the various points of view on the issue?**

- Diverging views on whether eradication does or does not work
- Diverging views on whether eradication is the best use of limited funds

## **Gulf of the Farallones Issue Work Plan**

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- Diverging views on whether education and outreach can be effective in slowing down the numbers of introduced species
- Diverging views on whether a regulatory approach can be effective

### **Working Group Contact:**

Paul Wong, phone: 415-561-6622, email: paul.b.wong@noaa.gov

### **Working Group Participants:**

Lauren Marks, Sea Grant  
Jan Roletto, GFNMS  
Shannon Lyday, FMSA  
Anne Walton, GFNMS/CBNMS  
Karen Reyna, GFNMS SAC  
Erin Williams, UC Davis  
Katie Zaremba, Coastal Conservancy  
Jodi Cassell, Sea Grant

### **Potential Working Group Participants:**

- Coastal Commission
- Elkhorn Slough
- San Francisco Estuary Institute
- California Dept. of Fish and Game
- California Environmental Protection Agency
- U.S. Fish and Wildlife Service
- California Environmental Resources Evaluation System (CERES)
- SF Bay NERR
- Bodega Marine Lab

### **Working Group Outcomes/Products:**

To better understand the issue of exotic species introduction in the Gulf of the Farallones National Marine Sanctuary, the working group will coordinate with Washington Sea Grant in taking a four-fold approach:

- Understand the extent of the introduction of exotic species in GFNMS
- Research sources of introduction
- Recommend management action(s) to prevent or reduce the introductions
- Develop a targeted public and industry outreach and education plan

### **Outcomes/Products:**

- Identify appropriate audience(s)
- Outline information/messages to be communicated to target audience(s)
- Identify outreach tools to be used to target audiences
- Develop an outreach communication action plan including: timeline, budget, effective uses of media, and partnerships

**Timeline:** Start: December  
Complete: April

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## Gulf of the Farallones Issue Work Plan

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### Issue Name: Mariculture

#### Issue Description:

GFNMS would like to protect the Sanctuary from present or future mariculture activities which result in impacts to the marine resources including: eutrophication, habitat changes, diseases, parasite introduction, accumulation of antibiotics, introduction of exotic/invasive species (including genetically altered), and escapement of hatchery stocks

NOAA defines aquaculture [mariculture] as "the propagation and rearing of aquatic organisms in controlled or selected aquatic environments for commercial, recreational, or public purpose. Potential purposes of aquaculture [mariculture] include bait production, wild stock enhancement, fish culture for zoos and aquaria, rebuilding of populations of threatened and endangered species, and food production for human consumption." (National Aquaculture Act of 1980 and 1985).

Currently, mariculture activities in the Sanctuary are limited to oysters, scallops and mussels grown on tidelands in Tomales Bay, leased from State Lands Commission and regulated by the California Department of Fish and Game. Future mariculture activities may be limited by the regulatory authority of Gulf of the Farallones National Marine Sanctuary which, with some exceptions, prohibits: 1) discharging or depositing any material within the Sanctuary, and 2) altering the seabed in anyway (exceptions include mariculture in Tomales Bay).

#### Has this issue been dealt with at another place or by another agency?

Most of the National Marine Sanctuaries have prohibitions that address discharging into the Sanctuary and disturbing the seabed. GFNMS, MBNMS and Florida Keys NMS (in the EEZ) have exceptions to their regulations that allow for mariculture development. Flower Gardens NMS has "no activity zones" and FKNMS has "Special-use Areas" (such as "Recovery Areas", "Restoration Areas" and Research-only Areas") that prohibit many or all activities including mariculture.

#### Internal Team Contact:

Jan Roletto, phone: 415-561-6622, email: jan.roletto@noaa.gov

#### Team Participants:

Michael Carver, CBNMS

#### Team Objective/Mandate:

The working group is two-fold in purpose:

- review and evaluate GFNMS' regulatory authority as it pertains to mariculture
- establish "best management practices" for the mariculture industry

**Timeline:** Start: December  
Complete: March

## Gulf of the Farallones Issue Work Plan

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### Team Outcomes/Products:

- Make recommendation on whether a proposed regulatory action to address impacts from mariculture is needed
  - Draft an outline for "best management" protocols and procedures for the mariculture industry
  - Make recommendation on education program
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### Issue Name: Vessel Traffic

#### Issue Description:

Recognizing that spills can potentially occur from any transiting vessel carrying crude oil, bunker fuel, or other hazardous material, GFNMS seeks to reevaluate the southern-most approach to San Francisco Bay, and make a determination whether a further correction needs to be made on the placement of the approach lanes.

The current pattern of vessel traffic transits established by the IMO through Cordell Bank, Gulf of the Farallones and Monterey Bay National Marine Sanctuaries relies on distances offshore, which are in part based on an analysis of the anticipated response time for existing rescue vessels. That is, if a vessel that follows the routing measures loses power or steering capabilities, it will almost certainly be reached by a rescue vessel before it drifts ashore and creates a spill. The calculations for "distances offshore" shifted the southern-most approach into San Francisco Bay vessel traffic lane closer to the Farallon Islands. The new vessel traffic lanes also shifted large commercial vessels away from nearshore waters to enhance the predictability of their locations and reduce collisions and interference with smaller fishing or recreational vessels. Again, this strategy placed the southern approach lanes into San Francisco Bay within closer proximity to the Farallon Islands, increasing the risk and exposure of sensitive Sanctuary resources to potential hazardous spills.

In May 2000, the International Maritime Organization (IMO) gave final approval to a shipping lane proposal developed through a two-year collaborative effort led by the Monterey Bay National Marine Sanctuary and the U.S. Coast Guard. In a series of meetings along the central California coast participants from local, State and Federal government agencies, the shipping and oil industries, environmental groups and elected officials played key roles in crafting the final solution.

The newly adopted vessel traffic lanes place large vessels further offshore in north-south tracks ranging from 13 to 20 nautical miles from shore between Big Sur and the San Mateo coastline. Ships carrying hazardous materials would follow north-south tracks between 25 and 30 NM from shore. Tankers would remain at least 50 NM offshore. To facilitate the alignment of these offshore routes, the proposal also extends the vessel traffic separation lanes in the western end of the Santa Barbara Channel and rotates the southern-most approach into San Francisco Bay further offshore to reduce the risk of grounding (but closer to the Farallon Islands). Because the separation scheme is voluntary, not all ships comply with the recommendations.

## **Gulf of the Farallones Issue Work Plan**

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As of 1998, approximately 6,000 commercial vessels (excluding domestic fishing craft) entered and exited the San Francisco Bay. Approximately half of these vessels transit south off the coast of California, while the other half transit north or west of San Francisco. Less than 25% of the vessels are tankers of intermediate size (draft <50 ft.) and about 5% are large vessels (draft >50 ft.). Other vessels that transit between San Francisco and Los Angeles include: container ships, bulk carriers, chemical carriers, military vessels, research vessels, cruise ships and tugs.

Historically, the total number of spills from transiting vessels is small, but the potential impacts may be enormous given the number and volume of vessels, and the hazardous cargo lane's proximity to the Farallon Islands and major seabird and marine mammal populations. Currently, the southern shipping lane approaches San Francisco Bay at a point approximately 3.5 miles from the Gulf of the Farallones. During the last year, approximately 2,000 commercial vessels were reported using the southern approach shipping lane. Large commercial vessels (LCVs) are of particular concern for spills since they can carry up to 1 million gallons of bunker fuel, a heavy, viscous fuel similar to crude oil, which they use for fuel.

Other issues related to vessel traffic include: discharges (including invasive species introductions), vessel strikes, acoustic impacts on living resources, air pollution from emissions, and vessel accidents.

### **What are the regional or national implications?**

Any proposed changes to the current IMO approved vessel traffic lanes may have implications for Monterey Bay and Channel Islands NMSs.

### **Internal Team Contact:**

Maria Brown, phone: 415-561-6622, email: maria.brown@noaa.gov

### **Internal Team Participants:**

Ruth Howell, GFNMS

Jim Kelley, GFNMS

Becky Smyth, NOS

George Galasso, OCNMS

Steve Thompson, NOS

Gerry Wheaton, NOS

### **Stakeholders directly affected by issue:**

American Waterways Operators, California Association of Port Authorities, California Coastal Commission, California Office of Spill Prevention & Response, Ocean Conservancy, Natural Resources Defense Council, Pacific Coast Federation of Fishermen's Associations, Pacific Merchant Shipping Association, San Francisco Bar Pilots, Council of American Master Mariners, U.S. Coast Guard, U.S. Fish and Wildlife Service, U.S. Navy, Western States Petroleum Association

**Timeline:** Meet February - June, to make a recommendation on whether GFNMS should move forward with proposing changes to the current vessel traffic lanes.

## Gulf of the Farallones Issue Work Plan

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### Internal Team Objective/Mandate:

- The internal team's goal is to recommend a vessel traffic management system that maximizes protection of Gulf of the Farallones National Marine Sanctuary and Monterey Bay National Marine Sanctuary resources while allowing for the continuation of safe, efficient and environmentally sound transportation.

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### Issue Name: Water Quality

#### Issue Description:

It is generally believed that water quality along the northern and central California coast is good, except in areas adjacent to population centers, such as the San Francisco Bay Area where there is a population base of more than 8 million people. As the population continues to grow and activities increase in the watershed and on the ocean, discharges and deposits from these activities will impact water quality in GFNMS.

#### IMPACTS ON ESTUARINE AND NEARSHORE ENVIRONMENTS

Existing data indicate that all of the state's surveyed tidal wetlands, 91% of surveyed estuaries, 81% of surveyed rivers and streams, and 71% of the surveyed bays and harbors are impaired or threatened by water pollution (Sheehan and Tasto 2001). However, the vast majority of California's waterways and small estuarine systems are not monitored by the state on a regular basis (Sheehan and Tasto 2001). Over 90% of the rivers and streams and 50% of the coastal shoreline of California are never monitored by the state.

Of special concern are the estuarine habitats of Bolinas Lagoon, Tomales Bay, Estero Americano, and Estero de San Antonio. Estuarine and nearshore environments are vulnerable to land-based pollution including: livestock grazing, agricultural runoff, improperly treated effluent, dumping and mercury from abandoned mines. Hazardous spills in the ocean are also of concern and due to strong tidal currents along the coast of northern California, spilled materials are rapidly transported. In addition to catastrophic spills, the estuarine environment is subject to small-scale inputs such as oily bilge water, detergents from deck wash, runoff from shipyards and sewage from harbors and marinas. Tomales Bay is considered impaired due to artificially high concentrations of heavy metals and nutrients.

#### IMPACTS ON OFFSHORE ENVIRONMENTS

In the 1960s and 1970s, regional industrial facilities discharged DDT and PCBs into coastal waters. While levels of persistent organic pollutants may be low at the point of discharge, effects may be significant over the reproductive life of the affected marine organisms. Levels of organochlorine compounds in fish collected near the Farallon Islands is higher than in fish collected in highly contaminated waters of southern California (Jarman et al. 1996). High levels of several pesticides have been found in Steller sea lions off of Cordell Bank and Common Murres from the Farallon Islands (Gross et al. (Gress et al. 1971). Rockfish and anchovy exhibit elevated levels of C<sup>13</sup> from the region of the Farallon Islands (Jarman et al. 1996).



## **Gulf of the Farallones Issue Work Plan**

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Although tankers carry the majority of the crude oil, other vessels carry and use large amounts of bunker fuel, a heavy oil similar to crude oil. Fuel capacity per vessel is approximately 10,000 to 1.2 million gallons. Although the number of spills is small, the potential impacts of bunker fuel are significant given the number of vessels, the potential size of the spill, the type of oil and oceanographic currents off the coast which allow for a widespread dispersion of oil.

### **Stakeholders directly affected by issue:**

US Geological Survey, US Environmental Protection Agency, National Park Service, California Coastal Commission, California Dept. of Fish and Game, CA Dept. of Parks and Recreation, California Environmental Protection Agency, CA Resources Agency, Regional Water Quality Control Board, State Water Resources Control Board, Marin and Sonoma County Agriculture Commission, Port Districts, County Planning, Non-government Organizations, and Farm Bureaus

### **Working Group Contact:**

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### **Working Group Participants:**

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Jennifer Saltzman, FMSA  
Holly Price, MBNMS  
Brenda Donald, GFNMS SAC  
Bob Breen, GFNMS SAC  
Jana Schackeroff, CA Coastal Commission  
Arleen Navaret, SF Sewage Outfall

### **Working Group Objective/Mandate:**

Build a framework for a regionally based, cooperative Water Quality Protection Plan

**Timeline:** Start: December  
Complete: April

### **Working Group Outcomes/Products:**

- Inventory and evaluate regional water quality monitoring plans
- Synthesize data and identify gaps
- Investigate framework for water quality plan for marinas and evaluate effectiveness of local ordinances and make recommendations
- Develop framework for water quality evaluation of agriculture and rural lands
- Develop framework for public outreach plan

## **Gulf of the Farallones Issue Work Plan**

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### **Issue Name: Wildlife Disturbance**

#### **Issue Description:**

The pressure on marine resources continues to grow as the human population increases around coastal areas and access to offshore environments becomes easier. With the multitude of opportunities for harvesting, observing and interacting with nature comes the potential for wildlife disturbance.

Wildlife disturbance may be caused by direct and indirect factors. Wildlife changes in populations may be a result of natural events such as storms, fluxuations in water temperature, physical/chemical changes to water, and the introduction of invasive species. Human activities such as recreational or commercial boating or wildlife viewing may also impact living marine resources. Out of all of these, it is human activity that is perhaps most manageable. Feeding wild animals; encroachment on nesting sites, nurseries and rookeries; collecting tidepool inhabitants; and trampling intertidal habitats, are some ways humans impact wildlife.

In 1996, more than 62 million Americans participated in some form of wildlife viewing or nature tourism - nearly one-third of all U.S. adults. In the same year, wildlife watchers spent \$29 billion in state and local economies, a 39% increase over 1991 spending. New information indicates the numbers are increasing. Activities include: wildlife viewing, viewing or photographing scenery, beach visitation, SCUBA diving and kayaking. California is second only to Florida in nature tourism and wildlife viewing.

Of specific concern to the Gulf of the Farallones Sanctuary are wildlife disturbances associated with: trampling and collecting in tidepools and mudflats, impacts from hikers, boaters and kayakers, and interactions with White sharks.

#### **Has this issue been dealt with at another place or by another agency?**

- GFNMS' SEALS and Beach Watch program monitors and reduces impacts on marine life
- Members of the Wildlife Disturbance Subcommittee, a subgroup of the Bolinas Lagoon Technical Advisory Committee, along with the Bay Area Sea Kayakers and local kayak companies have started a "paddling ethics" campaign called Paddler's Etiquette.
- MBNMS' Team Ocean Kayaker Outreach Program trains volunteers to provide interpretive enforcement, on the water presence, and when appropriate, interception of potential wildlife disturbance at two locations within the Monterey Bay Sanctuary.
- FKNMS developed a two-part outreach program that includes "Tips for Divers and Snorkelers" and Tips for Boaters and Fisherman". Additionally, FKNMS developed the model for "Team Ocean", an interpretive enforcement program carried out by trained volunteer boaters.
- NOAA is a supporter of "Watchable Wildlife", a partnership between thirteen agencies whose mission is to "elevate and promote wildlife viewing and nature appreciation for the benefit of society, while building community awareness, understanding and support for conservation of the wildlife and habitats upon which these activities depend".

## **Gulf of the Farallones Issue Work Plan**

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- Stellwagen Bank NMS and Hawaiian Island Humpback Whale NMS have adopted NMFS' Regional Guidelines for whale watching
- Legislation: Marine Mammal Protection Act, Migratory Bird Treaty Act, Endangered Species Act, Natural Marine Sanctuary Act

### **Working Group Contact:**

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Bob Wilson, GFNMS SAC  
Steve Dirkin, Fitzgerald Marine Reserve  
Nora Rojek, CDFG

### **Potential Working Group Participants:**

- NGOs
- kayak industry
- kayakers
- recreational boaters
- ecotourism industry
- Bureau of Land Management
- U.S. Fish and Wildlife Service
- National Marine Fisheries Service
- National Park Service
- Calif. Dept. of Fish and Game

**Timeline:** Start: February  
Complete: June

### **Working Group Outcomes/Products:**

- Establish objectives for wildlife viewing
- Evaluate levels and sources of impacts on wildlife and habitats
- Develop strategy for addressing human behavior that impacts wildlife
- Establish monitoring program to evaluate effectiveness

## **Monterey Bay Site Specific Issues**

### **Issue Name: Administration**

#### **Issue Description:**

MBNMS will address administrative issues such as identifying staffing and infrastructure resource needs, minor boundary and regulatory corrections, and permit-processing improvements. Minor boundary adjustments include addressing entrances to river mouths where the mean high tide line is not clearly delineated and entrances to harbors where fixed points provide a clearer delineation than the COLREG line at harbor mouths. Specifically some issues include clarifying the shoreward boundary-line across the entrances to annual and seasonal streams and lagoons, including the shoreward boundary for Elkhorn Slough and that part of Pescadero Marsh that is included within Sanctuary boundaries. This would also require altering the boundary at Santa Cruz Harbor to include the coastline between Pt. Santa Cruz and the West Small Craft Harbor Jetty tip within the Sanctuary. Discussion of potential boundary modifications to include Davidson Seamount can be found in Ecosystem Protection – Davidson Seamount.

Permit process improvements include examining ways to streamline the permit process without sacrificing protection of the resources. Some regulatory corrections may involve adding definitions or adding administrative guidelines for response actions or review of coastal development patterns (i.e. tracking and commenting on other agency land use actions). Another objective will be to develop a comprehensive operations program that identifies staffing and other resources necessary to adequately implement all programs identified in the management plan. The need for different office locations and staffing dispersment will also be evaluated. Other facility needs to be addressed include the actual need for a research and patrol vessel for the Sanctuary.

#### **Internal Team Contact:**

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#### **Team Participants:**

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Bill Douros, MBNMS	Andrew DeVogelaere, MBNMS
Dawn Hayes, MBNMS	Scott Kathey, MBNMS

**Timeline:** January 2003 - April 2003

#### **Outcomes and Products:**

- Analysis of permit processing program with recommendations to increase efficiency while maintaining safeguards for proper protection of Sanctuary resources
- Identified minor modifications to Sanctuary boundaries and clarifying definitions of regulatory terminology.

## Monterey Bay Issue Work Plan

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- Develop guidelines for Sanctuary review of coastal development actions or planning decisions that may adversely and directly or indirectly impact the marine ecosystem.
  - Operations plan identifying resource needs to implement all programs identified in the management plan
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### Issue Name: **Big Sur Coastal Ecosystem Plan**

#### Issue Description:

Presently, there are several local, state and federal agencies producing new or revised management plans affecting the Big Sur Coast. Public groups and individuals have raised a concern that all these agencies will develop separate plans for pieces of the Big Sur coastal ecosystem, rather than a single plan that identifies the related roles and interconnectedness among agencies and components of the ecosystem. MBNMS will work to identify a framework for a comprehensive multi-agency “Big Sur Coastal Ecosystem Action Plan”, integrating resource protection, education and outreach, and research and monitoring activities specifically for the Big Sur Area. Overlapping jurisdictions, different agency mandates and limited resources necessitate the development of a relationship bringing together multiple agencies for the common purpose of ecosystem management.

Specific planning efforts underway or in the early stages of development include:

- MBNMS Management Plan Review
- Monterey County Local Coastal Program Update
- Monterey County General Plan Update
- Los Padres National Forest, Forest Plan Update
- Caltrans’ Big Sur Coast Highway Management Plan
- California Coastal National Monument Management Plan
- Point Sur & Pfeifer State Park General Plans

The long-term goal will be one ecosystem plan, identifying all agency responsibilities and programs with identified areas of common management mandates and opportunities for coordination.

#### Working Group Contact:

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Lee Otter, California Coastal Commission

Mark Carr, UCSC

Jeff Norman, Local Resident

Kathleen Novoa, Local Resident

Scott Kathey MBNMS

Steve Lonhart, MBNMS

Lynn Rhodes, MBNMS SAC

Ken Wright, Big Sur Chamber of Commerce

Martha Diehl, Monterey County

Pete Raimondi, UCSC

Mary Trotter, Local Resident

Corey Brown, Big Sur Land Trust

## Monterey Bay Issue Work Plan

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Alec Arago, Sam Farr's office  
John Smiley, Big Creek  
Kelly Sorenson, Ventana Wilderness Society  
Fred Wendell, California Department of Fish and Game  
Aileen Loe, California Department of Transportation  
Rick Hanks, Bureau of Land Management  
John Bradford, USFS Los Padres National Forest

Jared Ikeda, Monterey County  
Jack Ellwenger, Pelican Network

**Timeline:** December 2002- April 2003

### Outcomes and Products:

- Representatives from the appropriate agencies will develop a framework by which this plan can be developed after adoption and implementation of the management plan.
- Specific components of the plan should identify opportunities and strategies for multi-agency resource management coordination including:
  - Opportunities and strategies for coordinated coastal and marine resource education, research and monitoring programs.
  - Strategies to develop and implement a discrete Emergency Response Plan (addressing hazardous spills, vessel groundings, etc.) for the Big Sur Coast
  - Strategies to coordinate agency enforcement efforts
  - Strategies to address watershed level resource protection, research, and monitoring.
  - A program to address marine resource concerns related to Caltrans landslide disposal where deposition of material from landslides along the Sanctuary's steep coastline can bury intertidal and subtidal habitat.

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### Issue Name: Coastal Development – Coastal Armoring

#### Issue Description:

With increases in development, additional pressures will come to install structures both to access the coast and to protect property from the ocean. These include infrastructure associated with harbors, breakwaters, and jetties as well as forms of coastal armoring. Development along the coast has increased the pressure to protect coastal structures with various types of coastal armoring to manage erosion such as seawalls, bulkheads and revetments. Coastal armoring can damage or alter local coastal habitats, deprive beaches of sand, lead to accelerated erosion of adjacent beaches, and hinder recreational access. The MBNMS currently prohibits alteration of the seabed and all armoring structures placed below the mean high tide line require authorization from the MBNMS. Until recently, MBNMS did not consider long-term impacts of seawalls in its authorization. In addition, many additional seawalls have been constructed with no notification to or authorization from MBNMS. Although the original designation document for the Sanctuary stated no new seawalls would be built, the Sanctuary has reviewed and authorized permits for seawalls, riprap or other coastal armoring projects at 16 sites since its designation, issuing specific conditions designed to minimize impacts of the construction process.

MBNMS staff has recently initiated a joint evaluation of coastal armoring with the California Coastal Commission, with the goals of developing a more proactive, comprehensive regional

## Monterey Bay Issue Work Plan

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approach to the issue and improving the current case by case permit system and strengthen coordination between the Coastal Commission and the MBNMS on coastal armoring permits. If any seawalls are to be permitted in the future as part of this approach or any permit system, modifications to the designation documents to allow seawalls and the appropriate environmental review would have to occur as part of this management plan review.

### Working Group Contact:

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### Working Group Participation:

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Gary Griggs, UCSC  
Frank Donangelo, Cannery Row Company  
AMBAG

Holly Price, MBNMS  
Dan Carl, California Coastal Commission  
Mark Johnson, Coastal Commission  
Ed Thornton, Naval Postgraduate School  
Aileen Loe, CalTrans  
Brian Baird, CA Resources Agency

**Timeline:** January 2003 – April 2003

### Outcomes and Products:

- Resolve inconsistency between MBNMS designation document stating that no new seawalls would be constructed and the fact that MBNMS has permitted seawalls in the past.
- Develop framework to strengthen coordination between the agencies on coastal armoring permits.
- Identify planning subregions and guidelines where different levels of review would be necessary or critical areas where armoring would not be allowed.
- Integrate strategies for different regions of the MBNMS into the management plan.

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## Issue Name: Coastal Development – Harbors and Dredge Disposal

### Issue Description:

Periodic dredging of the local harbors is a necessary component of keeping the harbor channels clear and allowing access for all types of vessels. There are four major harbors within the MBNMS, three of which conduct regular dredging activity. The Sanctuary does not directly regulate the dredging itself, i.e. the removal of sediment from the harbors and their channels--that activity is exempt from MBNMS regulations--but does have a regulatory role in the offshore disposal of dredged materials. When the MBNMS was designated in 1992, two existing offshore sites for dredge disposal were identified, and the establishment of new sites was prohibited within its boundaries. Since then, MBNMS has recognized and authorized the use of two additional sites at Santa Cruz and Monterey Harbors, which were in use and permitted prior to designation. The Sanctuary reviews the composition of the sediment and any associated contaminants and authorizes dredged material disposal at these sites for clean sediments of the appropriate grain size and amounts. The Sanctuary works jointly with other state and federal agencies, such as the California Coastal Commission, the US Army Corps of Engineers, EPA,

## Monterey Bay Issue Work Plan

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the Regional Water Quality Control Board, National Marine Fisheries Service, and US Fish and Wildlife Service to review and authorize dredge disposal within the MBNMS. These reviews minimize impacts to Sanctuary resources while allowing the continued operation of our critical local harbors. Sanctuary officials have allowed about 98% (by volume) of all dredge spoil proposed by local harbors for offshore disposal in the MBNMS since 1992.

The MBNMS will review its dredge disposal permit procedures and disposal locations as part of the Joint Management Plan Review. With input from harbor masters and other stakeholders, this review will focus examining methods for improved coordination with other agencies and efficient allocation of time and resources. The proposed reconstruction of a pier at Moss Landing may also require review of how the location of the pier affects an existing offshore dredge disposal site and whether that site remains a viable option.

### Working Group Contact:

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### Working Group Participation:

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Linda Sheehan, Ocean Conservancy

Kelly Cuffe, California Coastal Commission

Susan Danielson, SOS

Dave Ebert, MBNMS SAC

Charles Lester, MBNMS SAC

Kenneth Coale, Moss Landing ML

Brian Ross, U.S. EPA

Yvonne Letellier, ACOE

Jim Anderson, Fishing

RWQCB

**Timeline:** December 2002 – February 2003

### Outcomes and Products:

- Review MBNMS dredge disposal permit process and identify potential methods for increased efficiency and coordination.
- Analyze need for new or modified dredge disposal locations and/or potential changes in volume
- Recommendations on whether modifications to the regulations should be pursued.

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## Issue Name: Coastal Development – Submerged Cables

### Issue Description:

Installation of submerged cables in the MBNMS alters the seabed causing significant environmental impacts and potential hazards for fishing activities. Submerged cables may be used for commercial, defense or research related activities. MBNMS regulations currently prohibit alteration of the seabed but the Sanctuary does not have clear policy guidance in reviewing applications for installation of submerged cables that will be submitted in the future. Currently submerged cable applications are reviewed on a case by case basis however, up front policy guidance for future applicants would provide for a more efficient permitting process and inform future applicants as to preferred alternatives prior to submitting an application. As part of



## Monterey Bay Issue Work Plan

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this process, MBNMS will develop a framework to identify sensitive areas of the seafloor within the Sanctuary and provide a clear policy structure with which to review future submerged cable development applications.

### **Internal Team Contact:**

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### **Internal Team Participation:**

Irina Kogan, MBNMS/MBARI

**Timeline:** January 2003 – April 2003

### **Outcomes and Products:**

- Framework to develop nationwide guidelines on appropriate locations and restrictions for submerged cables.

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## **Issue Name: Ecosystem Protection – Benthic Habitats**

### **Issue Description:**

Bottom trawling is known to adversely impact the seafloor and benthic habitat, however there is a lack of knowledge about the extent of the impacts on marine resources and the potential need for protective action. There are currently some area closures in both the state and federal waters of the MBNMS. Recently additional closures related to the groundfish fishery resulted in additional, although partial, protections. The MBNMS will develop a framework to gather data on the types of trawling activities and their impacts to the seafloor, the benthic layer, and the associated living marine resources other than the targeted species during trawling activities. MBNMS will examine impacts related to bottom trawling that may result in recommended protective measures to be implemented by the MBNMS or fishery management agencies.

### **Working Group Contact:**

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### **Working Group Participants**

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Linda Kuhnz, MBARI  
George Gross, CDFG  
Lisa Wooninck, NMFS

Kaitilin Gaffney, MBNMS SAC  
Steve Shimek, CWG  
Fiorenza Micheli, Hopkins Marine Station  
Bob Schwemmer, CINMS  
Trawl Fisherman (to be named)

**Timeline:** January 2003 – April 2003

## Monterey Bay Issue Work Plan

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### Outcomes and Products:

- Develop a framework for staff to examine impacts to benthic habitats from fishing gear generally associated with bottom trawling activities
  - The framework would include the potential options for protective measures and the responsible agencies for regulation and enforcement.
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### Issue Name: Ecosystem Protection – Davidson Seamount

#### Issue Description:

Located 80 miles south-west of Monterey, the Davidson Seamount is an impressive geologic feature with potentially significant resource management needs. Davidson Seamount is geologically young but has remarkable biological communities, including large, dense patches of sponges and apparently extremely old coral forests, with individuals commonly reaching more than 3 m in height. Rare species, such as the black-footed albatross and the federally listed endangered sperm whales, have been sighted at the seamount. Seamounts provide structure for animals to live on, and the structure creates oceanographic effects that promote the production of food. Many of these deep-sea animals, such as gorgonians, mushroom corals, and sponges, spend their entire lives permanently attached to rocks, and therefore depend on ocean currents to bring their food to them. A seamount, by rising from the seafloor, has strong currents that frequently run over it, providing the animals living along its flanks with a constant supply of planktonic food. These same currents also produce localized upwelling of water around the seamount. Nutrients like nitrates and phosphates, which are critical to the growth of phytoplankton, are then lifted from deepwater to the sunlit surface waters. These nutrients fuel a surge of planktonic plant and animal growth, and attract larger animals such as whales, sharks, tunas, and seabirds to a veritable feast. The settlement of larvae from distant geographical areas in addition to the other biological interactions make the Davidson Seamount a significant "hot spot" of biodiversity.

There has been long-term interest in Davidson Seamount as a unique geologic feature. In 2000, a Presidential announcement designated Davidson Seamount as an important site to launch a new era of U.S. undersea exploration. Recent advances in technology made possible a biological survey of the area in May 2002 led by MBNMS staff, and a preliminary assessment indicated the area is unique and deserves resource management consideration. Two commercial fisheries currently operate in the waters above Davidson Seamount—drift gill netting for swordfish and sharks and trolling for albacore tuna. It is not known how or if these fisheries impact other species at the seamount. Its proximity to numerous fishing ports and the developing technologies in deep-water fishing make Davidson particularly vulnerable to increased fishing pressure.

The Monterey Bay National Marine Sanctuary will analyze the potential for including the Davidson Seamount as part of the sanctuary. The goal of the working group will be to review scientific analyses from the May 2002 characterization of the Seamount (species lists, species distribution and abundance, unique attributes of species), assess the needs and impacts of users of the Davidson Seamount area, determine current and potential threats to the habitat, and assess whether the area deserves the special protection status of a National Marine Sanctuary.

## Monterey Bay Issue Work Plan

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### Working Group Contact:

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### Working Group Participants:

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Ron Massengill, MBNMS SAC	Kathy Fosmark, Alliance
Tom Roff, albacore fisherman	Curt Collins, U.S. Navy
Robert Vrijenhoek, MBARI	David Clague, MBARI
Lisa Wooninck, NMFS	Greg Caillet, MLML
Seamount Conservation Interest	

**Timeline:** January 2003 – April 2003

### Outcomes and Products:

- Analysis and recommendation for potential increased protection of the Davidson Seamount via inclusion in the Monterey Bay National Marine Sanctuary.

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## Issue Name: Ecosystem Protection – Emerging Issues

### Issue Description:

The goals and objectives set forth by the National Marine Sanctuary Act (NMSA) direct each of the sanctuaries to take an ecosystem-based approach to managing the marine areas. The ecosystems include habitat structure, species assemblages and ecological processes, as well as humans and uses compatible with resource protection. MBNMS will actively pursue protection of the ecosystem and enhance biodiversity through its management strategies for program areas such as education, community outreach, monitoring, and research, and addressing human use activities through regulatory and non-regulatory strategies. MBNMS staff also recommends developing a mechanism or process to focus on long-term sustainability and look ahead to emerging resource protection issues, as crucial strategies towards the goal of resource protection.

### Internal Team Contact:

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### Internal Team Participants:

Dawn Hayes, MBNMS	Andrew DeVogelaere, MBNMS
Rachel Saunders, MBNMS	

**Timeline:** December 2002 – February 2003

### Outcomes and Products:

- Develop a framework for staff to work closely with local community and related agencies to ensure biodiversity protection and ecosystem conservation are top priorities.
-

**Issue Name: Ecosystem Protection – Incorporate Fishing Issues into Education and Research Plans**

**Issue Description:**

Fishing in the Monterey Bay National Marine Sanctuary is part of the region’s cultural and economic history and also has an impact on the health of the Sanctuary’s ecosystem. Several issues were raised during the scoping meetings regarding the need for the Sanctuary to better educate the public about both the positive and negative aspects of commercial and recreational fishing in the Sanctuary. This includes providing information about the health and trends of fish stocks in the Sanctuary as well as providing information about the history of fishing in the Central Coast. This would also involve the need for the Sanctuary to conduct more research into the fisheries and changing populations and to integrate the fishing community into the gathering of data that is used for fishery related decisions.

To address this issue, the MBNMS would develop a program that would seek to educate the public about fishing issues in the Sanctuary. The MBNMS will also develop strategies for involving the fisherman in research activities and develop methods of using the fishing community’s knowledge of fish stocks to add to the body of research available for fishery related decision making processes.

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Kathy Fosmark, Alliance	Mark Carr, UCSC
George Leonard, COMPASS	Lisa Wooninck, NMFS
Pietro Parravano, Fisherman	David Crabbe, Fisherman
Tim Thomas, Monterey Maritime Museum	
CDFG	

**Timeline:** January 2003 – April 2003

**Outcomes and Products:**

- Outline a program to incorporate fishing related activities into the research and education plans for the MBNMS.

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**Issue Name: Ecosystem Protection – Krill Harvesting**

**Issue Description:**

Krill is a critical component of the marine ecosystem and is fundamental to the trophic structure of the marine life within the sanctuary. Krill is currently not harvested within the sanctuary,

## Monterey Bay Issue Work Plan

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however the potential exists for this fishery to develop in the future. At this time, krill may not be harvested within state waters or landed within the State of California. However, the federal waters in the sanctuary may soon be open to fish farming, outside the reach of state governments. NMFS is currently soliciting comments on their proposed Code of Conduct for Offshore Aquaculture, which could place net pens in areas of the sanctuary. This code was generated pursuant to the Department of Commerce's stated goal of a five hundred percent increase in the nation's aquaculture by the year 2025. These net pen raised fish will likely demand krill as feed stock. This may further increase the likelihood of a krill fishery developing within Sanctuary waters.

The oceanographic and bathymetric features of the MBNMS make it uniquely susceptible to the adverse effects of krill fishing. The Monterey submarine canyon provides krill with a distinctive habitat that contributes to their abundance and degree of aggregation. This makes the waters within the sanctuary a critical feeding ground for countless forms of wildlife. These include predators like the blue whale, dense concentrations of seabirds, and commercially important fish such as salmon and recovering species of rockfish. The canyon habitat provides opportunity for high night time surface feeding due to its location downstream from an upwelling center, a refuge from daytime predation as krill can migrate to depths in excess of 100m in the canyon, and reduced swimming energy output during daytime schooling at depth due to reduced canyon slope currents.

In the Antarctic krill fishery, managers have found that localized krill mortality from fishing may be too high to support predators with restricted foraging ranges, or may cause a shift in the behavior and distribution of more widely ranging species. The timing of the krill fishery during months exacerbates this concern since many species of breeding bird and seal predators are dependent on the resource. In the MBNMS, a fishery would correspond to the times of peak blue whale abundance and could interfere with both the feeding behavior of the whales, the whale watching industry, and tourism in general. A krill fishery could adversely impact commercial and recreational fisheries of all kinds as most target species are directly or indirectly dependent on the resource.

To address this issue, MBNMS will explore the potential for the future harvest of krill, outline the current regulatory framework, and potentially recommend permanent restrictions in the Sanctuary.

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### **Working Group Participation:**

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Mike Osmond, WWF

Steve Ralston, NMFS  
Patti Wolf, CDFG  
Bill Sydeman, PRBO

**Timeline:** January 2003 – April 2003

## Monterey Bay Issue Work Plan

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### Outcomes and Products:

- Identify potential for krill harvesting in the Sanctuary
  - Recommendations for pursuit of potential permanent restriction of krill harvesting in MBNMS
- 

### Issue Name: Ecosystem Protection – Marine Reserves

#### Issue Description:

Sanctuaries are mandated to protect living marine resources, habitats and biodiversity. Public debates on the value of marine reserves to protect living marine resources have increased in the past few years. The issue of marine reserves within MBNMS received the most attention during the public scoping process. Fully 67% or the 12,000 comments received by the MBNMS either asked MBNMS to designate marine reserves, or asked the MBNMS to only address the issue with the support of the fishermen and via existing fishery management agencies. Measures to protect a sanctuary ecosystem need to include all necessary strategies including the designation of marine reserves where the resources are fully protected.

The State of California is currently examining the implementation of a network of marine reserves under the implementation of the Marine Life Protection Act (MLPA). There is currently no examination of marine reserves in the federal waters of the Sanctuary that comprise approximately 80% of the MBNMS responsibility.

The MBNMS is currently represented on two of the MLPA regional working groups to provide input to the California Department of Fish and Game on designing and siting of marine reserves in the state waters of the Sanctuary. The MBNMS has also been working closely for over a year with the Alliance of Communities for Sustainable Fisheries to gather input from the fishing community in forming recommendations on marine reserve issues.

To address the issue of properly protecting the Sanctuary's marine ecosystem via marine reserves, the MBNMS will outline the framework for providing input to CDFG on the implementation of MLPA and evaluating the success of their effort and potential need for further action. The MBNMS will also develop a framework to address the need for, and if necessary, location, and type of marine reserves in the federal waters of the Sanctuary. The MBNMS will work closely with fisherman and other interested parties, and state and federal fishery managers to implement the marine reserves.

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Frank Degnan, MBNMS SAC

Pat Clark-Gray, MBNMS SAC

Lisa Wooninck, NMFS

## Monterey Bay Issue Work Plan

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Mike Osmond, CWG

George Leonard, COMPASS

Bill Sydeman, PRBO

Jim Seger, PFMC

Steve Scheiblauber, City of Monterey

Mark Carr, UCSC

Mike Ricketts, Alliance

David Crabbe, Fisherman

Howard Egan, Recreational fisherman

**Timeline:** January 2003 – April 2003

### Outcomes and Products:

- Outline the framework for the MBNMS to provide input into the MLPA process establishing a network of marine reserves in the state waters of the MBNMS and evaluate its success.
- Develop a framework for the MBNMS and its partners to determine the need for, and if necessary, describe a network of marine reserves in federal waters.

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### Issue Name: Ecosystem Protection – Southern Boundary

**Issue Description:** On the matter of expanding the MBNMS boundary further south, the Sanctuary Advisory Council ranked this issue relatively low in comparison to the many other resource protection, education, and research needs of the MBNMS. Many of the comments received opposed a boundary shift to the south. Because of renewed local interest in expanding the boundary south, the SAC scheduled a special meeting for the evening of August 1, in Cambria. Following significant input from the public regarding this issue, the Advisory Council voted to “support a local working group to explore options for expanding southern MBNMS boundary or other alternatives.” Since the August meeting, local government officials in San Luis Obispo county begun the process of gathering various stakeholders representing various coastal and ocean interests for a discussion of the options. Following this recommendation from the SAC, MBNMS staff agreed to provide staff to track the progress of the group and to provide any group with information regarding the National Marine Sanctuary Program, the Monterey Bay National Marine Sanctuary, or the Joint Management Plan Review. The results of this group’s effort may lead to a recommendation to MBNMS, NMSP, or to the U.S. Congress regarding potential options for the marine ecosystem south of the MBNMS boundary. It is important to note that this group is not associated with the MBNMS Sanctuary Advisory Council or the other JMPR working groups described in this document.

### MBNMS Contact:

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Michele Roest, MBNMS, Phone: 805-927-2145, Email: [michele.roest@noaa.gov](mailto:michele.roest@noaa.gov)

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### Issue Name: Exotic Species

#### Issue Description:

Invasions by non-native aquatic species are increasingly common worldwide in coastal habitats. Estuaries, in particular, harbor large numbers of introduced species. For example, there are about

## Monterey Bay Issue Work Plan

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250 known invasive species in the San Francisco Bay and Delta. Within Sanctuary waters, there are approximately 60 invasive species in Elkhorn Slough, and another small handful of species recently reported in nearshore coastal waters. The effects of introduced aquatic species on habitats they colonize is often unknown, however, some clearly have had serious negative influences. Impacts often include decreasing abundance and even local extinction of native species, alteration of habitat structure, and extensive economic costs due to biofouling. Probably the most important mechanism for the introduction of aquatic species is transport in ship ballast tanks, though other mechanisms such as introduction through improper disposal of aquarium materials, bait and seafood packing materials, aquaculture operations, and research activities can contribute to the issue.

While known to be a growing problem there has not been a systematic survey of nearshore coastal waters to evaluate the level of invasive species present. Eradication of introduced species is difficult and often impossible, and management practices focus largely on prevention of introductions. The Sanctuary has conducted some limited research and education on this issue and occasionally reviewed and provided comments to other agencies on ways to prevent introductions.

This issue received considerable public input and was highly ranked by the Advisory Council, however the MBNMS lacks resources to address the issue at this time. The MBNMS will use the management plan review to prohibit the discharge of exotic species into the Sanctuary, however a comprehensive action plan and strategies to address this issue will be developed in the future.

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### Issue Name: Interpretive Facilities

**Issue Description:** Comments by the public and the SAC suggested an important issue facing the Sanctuary was a lack of awareness of the resource issues facing our local oceans. Facilities for education, research, and outreach provide a critical vehicle for interaction and developing a sense of stewardship with the constituent base of the MBNMS. The original 1992 management plan for the MBNMS included an expectation that visitor center(s) would be developed along the Sanctuary's shoreline. Progress on this issue was finally made in the past year with the commencement of a Feasibility Study to evaluate possibly siting a visitor center, developed with partners, at one of 3 possible sites around Monterey Bay.

The MBNMS will develop strategies to provide for the development of an MBNMS Visitors Center and Regional Interpretive Centers using the recommendations from the Feasibility Study. This will be completed around January and work on an action plan for development will begin at that time. The MBNMS will also identify necessary signage and interpretive center needs throughout the sanctuary.

### Internal Team Contact:

Dawn Hayes, MBNMS, 831-647-4256, [dawn.hayes@noaa.gov](mailto:dawn.hayes@noaa.gov)



## Monterey Bay Issue Work Plan

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### **Internal Team Participation:**

Michele Roest, MBNMS

Jen Jolly, MBNMS

**Timeline:** January 2003 – April 2003

### **Outcomes and Products:**

- Action Plan to develop a MBNMS Visitor Center in the Monterey Bay area
- Sanctuary-wide program identifying necessary resources and location for appropriate signage, kiosks, and interpretive centers

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## **Issue Name: Multicultural Outreach - MERITO**

### **Issue Description:**

MBNMS has recently developed an action plan for multicultural outreach named the MERITO (Multicultural Education for Resource Issues Threatening Oceans) plan. MERITO was developed in partnership with local Latino communities to provide expanded bilingual outreach and education about marine and coastal environments and their conservation to students, teachers, adults and families. MERITO, (Spanish meaning is “merit” or “worth”) includes three specific areas of focus: community-based outreach, site-based outreach, and teacher professional development and college internships.

This program, while developed, has not been fully implemented. Currently, California State Parks, Elkhorn Slough National Estuarine Research Reserve and the MBNMS have teamed up to launch a first stage pilot program for the site-based outreach component. Multicultural outreach strategies specifically for the MBNMS will focus on implementing the MERITO plan and incorporating MERITO into the management plan.

The long-term goal of this action plan will be full implementation of all three main components of the MERITO plan, as well as integration of the program into the overall MBNMS education plan. The Spanish language component is the first of a series of multicultural education and outreach plans that will eventually target other diverse communities. Ultimately, MERITO will be exported to other sanctuaries as a model multicultural education and outreach program.

Implementation of the existing MERITO framework will result in the development and delivery of Spanish language bilingual outreach programs, materials, and products addressing why ocean protection is a role all coastal citizens share, and how Latino families take action in their own lives to protect coastal and watershed areas. Delivery will occur through field trips and classroom outreach for K-12 schools, training and resources for youth leaders of after school programs, internships and scholarships for Latino college students, professional development for Latino-serving teachers, and special events and projects for migrant families.

### **Internal Team Contact:**

Karen Grimmer, MBNMS, Phone: 831-647-4253, Email: [karen.grimmer@noaa.gov](mailto:karen.grimmer@noaa.gov)

## Monterey Bay Issue Work Plan

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### **Team Participation:**

Michele Templeton, MBNMS

Dawn Hayes, MBNMS

**Timeline:** January 2003 – March 2003

### **Outcomes and Products:**

- Implementation of the MERITO program and integration into the MBNMS Management Plan

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## **Issue Name: Water Quality – Beach Closures and Coliform Contamination**

Many of the Sanctuary's beaches are regularly closed or posted by county health departments as showing elevated levels of contamination from coliform bacteria. These beach closures or postings have obvious impacts on recreation, including surfing, diving and swimming, as well as impacts on tourism and aquaculture operations. Pathogens in human sewage may cause health impacts for those who come in contact with the contaminated water, including the spread of diseases, ear infections, nausea, and rashes. Recognized clogs and spills into the Sanctuary, which are prohibited by current Sanctuary regulations, can occur due to aging undersized and cracked infrastructure and to inappropriate contributions to the sanitary system, such as foam, diapers and grease. Leaching, illicit connections, cross-contamination between sanitary and storm drain systems, and septic tanks can also regularly contribute to high beach coliform levels. Some contamination may also be due to wildlife such as marine mammals and birds, pet droppings, and small livestock facilities.

To date, the Sanctuary's involvement in this issue has included working with the cities on addressing urban runoff, including coliform contamination, and investigating and jointly pursuing potential funding opportunities for local communities to better identify sources of coliform contamination and improve infrastructure systems. The expanding amount and regularity of sewage spills into the MBNMS, as well as the regular beach closures due to unknown sources of coliform make regional resolution of this issue a top priority. The MBNMS will work with local communities to develop a framework to address the issue through identifying sources of contamination and remediation measures.

### **Working Group Contact:**

Chris Coburn, MBMNS

### **Working Group Participation:**

Holly Price, MBNMS

Lisa Emanuelson, MBNMS

George Cook, MBNMS SAC

Kaitilin Gaffney, MBNMS SAC

Huff McGonigal, MBNMS

Steve Lonhart, MBNMS

Dave Ebert, MBNMS SAC

Berkeley White, MBNMS SAC

## Monterey Bay Issue Work Plan

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Dave Vincent, State Parks  
Fleur O'Neil, Save Our Shores  
Regional sewage treatment plant reps  
MBNMS WQPP Committee (Members Listed as Appendix 1)

Coastal Public Works Departments  
Surfrider Representative  
County Health Departments

**Timeline:** January 2003 – April 2003

### Outcomes and Products:

- Summary of extent and sources of beach coliform contamination in Sanctuary.
- Framework to develop beach closure/coliform program addressing infrastructure, monitoring, education, and enforcement needs.

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## Issue Name: Water Quality – Desalination

### Issue Description:

Three desalination facilities currently operate within the boundaries of the Sanctuary, however there has recently been an increase in proposals for both private and public desalination plants. Currently there are an additional 12 facilities in the Sanctuary region that are in some stage of initial consideration or planning. Due to population growth in the area, continuing shortages and degradation of conventional water supplies, and advances in desalination technology, the trend will likely continue. Desalination plants have the potential to negatively impact the marine environment through the introduction of brine waste effluent and other substances to Sanctuary waters. Additionally, the construction of desalination facilities and associated pipelines often causes alteration of the seabed. MBNMS will work with various stakeholders in the development and implementation of regional desalination guidelines and recommendations.

The long-term goal will be to minimize impacts to Sanctuary resources and qualities stemming from desalination activities, and allow the Sanctuary to address desalination more comprehensively through the development of a series of regional guidelines and recommendations. The guidelines and recommendations will be aimed at parties seeking permits, considering, or proposing to build a desalination plant. The action plan will include specific strategies aimed at minimizing impacts, and will address siting concerns, establish guidelines for monitoring practices, and identify engineering, design and operation aspects reducing impacts. The plan will recommend ways to reduce the proliferation of multiple small plants and encouraging the use of existing regional facilities where the brine discharge could be diluted. Additionally, the action plan will include strategies for education and outreach of stakeholders.

### Working Group Contact:

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### Working Group Participation:

Holly Price, MBNMS	Steve Lonhart, MBNMS
Charles Lester, MBNMS SAC	Ron Massengill, MBNMS SAC
Richard Nutter, MBNMS SAC	Jane Delay, Save Our Shores
Mike Bekker, BTAP	John Fisher, CWG

## Monterey Bay Issue Work Plan

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Pete Raimondi, UCSC  
Kelly Cuffe, California Coastal Commission  
Matt Thompson, Central Coast Regional Water Quality Control Board  
Technical expert

Tom Luster, California Coastal Commission

**Timeline:** January 2003 – April 2003

### **Outcomes and Products:**

- Strategies to minimize the impacts of desalination on Sanctuary resources and qualities
- Regional guidelines and recommendations for desalination plant proponents
- Education and outreach plan to facilitate the provision of relevant information to interested parties

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## **Issue Name: Water Quality – Memorandum of Agreement Revision**

### **Issue Description:**

The MBNMS developed a Water Quality Management Memorandum of Agreement (MOA) with key agencies as part of the 1992 Management Plan. This MOA provided an ecosystem based water quality management process that integrated the mandates and expertise of existing coastal and ocean resource managers to protect the resources, qualities, and compatible uses of the Sanctuary. This MOA outlines agency roles and responsibilities, procedures for decision-making, agreements for coordination of management research and monitoring efforts. Numerous activities have taken place since 1992 which need to be reflected in the MOA, such as development of four WQPP plans, the state's nonpoint source control program, etc.

### **Working Group Contact:**

Chris Coburn, MBNMS

### **Working Group Participation:**

Holly Price, MBNMS  
Katie Siegler, MBNMS  
MOA Participants

Bridget Hoover, MBNMS  
Craig Wilson, MBNMS SAC

**Timeline:** January 2003 – June 2003

### **Outcomes and Products:**

- Updated MOA that reflects developed and future WQPP plans and other new interagency programs.

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## **Issue Name: Water Quality – Riparian and Coastal Wetlands**

**Issue Description:** Wetlands and riparian corridors adjacent to the sanctuary suffer from degradation due to over development, invasive species, pollution and erosion. While this issue

## Monterey Bay Issue Work Plan

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received considerable public input and was highly ranked by the Advisory Council, the MBNMS lacks resources to address the issue now. A framework and strategies to address this issue will be developed in the future, and implemented as part of a comprehensive water quality program. At this time due to lack of resources, this program will be deferred, however MBNMS will develop a conceptual framework and schedule as part of the draft management plan.

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### **Issue Name: Water Quality – WQPP Implementation**

**Issue Description:** Water quality issues occurring in the Sanctuary’s watersheds include contaminants such as nitrates, sediment, persistent pesticides, oil and grease, detergents, metals and coliform bacteria. The Sanctuary’s Water Quality Protection Program (WQPP) committee has developed multistakeholder plans for urban runoff, marinas and boating, agriculture and rural lands, and regional water quality monitoring. The plans are being partially implemented through pooling of existing staff from various agencies and groups, grant funding, and volunteers.

A regional monitoring plan is underway to coordinate and expand water quality data, with the state’s Regional Water Quality Control Board leading development of government data on the Central Coast, and the Sanctuary and nonprofit groups leading the coordination and synthesis of volunteer monitoring data. Implementation of the urban runoff plan has involved development of a Model Urban Runoff Program which is being implemented with the California Coastal Commission and three cities, including local ordinance revisions, municipal best management practices, illicit discharge detection programs, technical training workshops and extensive education and outreach efforts. Implementation of the marinas and harbors plan has included working with local harbormasters and environmental organizations on the siting of pump out facilities for oily bilge water in three local harbors, technical trainings for harbor staff, and educational outreach to boaters.

The largest and most recent plan addresses polluted runoff from over 4000 square miles of agriculture and rural lands. It includes a unique agreement with the Farm Bureaus representing the region's extensive agricultural community to establish industry-led networks to improve soil, nitrate and pesticide management practices. Initial implementation of this regional plan has included establishment of farmer-led erosion and nitrate control projects in seven watersheds in located in six counties. The effort has also generated substantial additional funding from the USDA to our partners, the Natural Resources Conservation Service, the University of California Cooperative Extension, and local Resource Conservation Districts, which has brought on a team of experts to help carry out the plan and conduct technical outreach to farmers on conservation measures.

Although significant gains have been made in implementing the plans, a large number of strategies have not yet begun implementation, or implementation has only been accomplished in a limited geographic area. Addressing this issue will require reviewing which strategies have not yet been begun or are not fully implemented, and developing ways to address barriers to implementation including interagency staffing, funding and coordination needs. It should also include a more formal ongoing tracking system for evaluation of successes of and barriers to

## Monterey Bay Issue Work Plan

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implementation by the multiple agencies, public and private partners involved in carrying out the plan. The completed plans and this updated analysis need to be incorporated into the new management plan.

### **Working Group Contact:**

Chris Coburn, MBNMS

### **Working Group Participation:**

Holly Price, MBNMS

Andrew DeVogelaere, MBNMS

Lisa Emanuelson, MBNMS

Bridget Hoover, MBNMS

Katie Siegler, MBNMS

Richard Nutter, MBNMS SAC

WQPP committee (See Appendix 1)

**Timeline:** January 2003 – April 2003

### **Outcomes and Products:**

- Strategies to complete an assessment of the progress of the WQPP to date
- Strategies to fully implement all elements of existing water quality plans.
- Incorporation of the WQPP plans into the management plan

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## **Issue Name: Wildlife Disturbance – Marine Mammals, Seabirds, and Turtles**

**Issue Description:** The Sanctuary provides many opportunities for wildlife viewing, including whale watching, bird watching, observation of pinniped pupping and haulout activities, and tidepooling. With the multitude of opportunities for observing and interacting with nature comes the potential for wildlife disturbance which may result in impacts on marine resources such as: flushing of birds from nesting sites, pinnipeds abandoning pups, potential harassment or even death to wildlife. MBNMS currently addresses some of these issues through regulatory measures such as prohibitions of white shark attraction and marine mammal and seabird harassment, and over-flight restrictions for sensitive areas; and non-regulatory measures such as the TEAM OCEAN kayaker interpretive enforcement program, and other education and outreach efforts to minimize impacts to living marine resources. Potential impacts from low-flying aircraft are addressed by a specific prohibition on flying under 1000 feet in designated overflight zones with sensitive wildlife. Some implementation problems have occurred due to pilot's lack of understanding and acknowledgement of the zones since they are not noted on aeronautical charts. MBNMS has begun an outreach campaign to pilot's associations on the zones and the impacts of low flights, and is working to include notations on the charts.

Major disturbances to marine mammals and seabirds continue to be a major issue within the MBNMS. To address this issue, MBNMS will develop a framework to review the current wildlife disturbance protective measures such as the aircraft overflight zones and to develop protective measures for potential impacts from wildlife viewing activities such as whale watching or wildlife viewing from non commercial vehicles. The framework will include development of viewing guidelines, educational and outreach strategies, and enforcement measures.

## Monterey Bay Issue Work Plan

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### Working Group Contact:

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### Working Group Participation:

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Michele Roest, MBNMS

Harriet Mitteldorf, MBNMS SAC

Lynn Rhodes, MBNMS SAC

Caryn Owens, Friends of the Sea Otter

Scott Benson, MLML

Paul Kelly, CDFG

USFWS

Ron Harmon, local pilot

Monterey Film Commission

Jen Jolly, MBNMS

Lisa Emmanuelson, MBNMS

Heidi Tiura, MBNMS SAC

Michelle Knight, Adventures by the Sea

Rick Hanks, California Coastal Monument (BLM)

Kaya Pederson, PRBO

Rec. fishing/charter boat rep

NMFS

Coast Guard (environmental Liaison)

Friends of the Elephant Seal

**Timeline:** November 2002 – April 2003

### Outcomes and Products:

- Framework to develop education, outreach, survey and monitoring strategies to address potential whale watching harassment, marine debris, kayak disturbance, elephant seal harassment, low overflights (seabird, pinnipeds, and whales) and potential acoustic impacts to marine mammals.

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## Issue Name: Wildlife Disturbance – Motorized Personal Watercraft

### Issue Description:

Motorized personal watercraft (MPWC), operate in a manner unique among recreational vehicles creating potentially significant impacts on wildlife, water quality and personal safety. In addition to impacting marine resources, there have been conflicts between MPWC users and other recreational ocean users as a result of the noise and operation of MPWCs. This issue was raised during scoping meetings recognizing that the current regulations do not address the changes in MPWC technology and size during the last ten years.

Currently, MBNMS regulations include a partial ban on MPWC. The sanctuary originally restricted MPWCs to certain zones in order to protect Sanctuary resources, in particular marine mammals and seabirds, and defined MPWC specifically. Review of MPWC regulations will be necessary, as many recent designs of personal watercraft are not covered by the Sanctuary's 1992 definition of such craft, which envisioned vehicles carrying only one or two passengers. Related issues include evaluating the need for some or all zones, and the buoy system to demark zones, and the need for effective enforcement and education on the zones to reduce conflicts.

### Working Group Contact:

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## Monterey Bay Issue Work Plan

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### Working Group Participation:

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Tom Stuhldreier, MBNMS SAC

John Moule, SLO Surfrider

Adam Regpolgo, Surfing Interests

Susan Danielson, Save Our Shores

Stephan Andranian, American Watercraft Association

Don Kinnamon, Santa Cruz Port District/CBSOA

Doug Hipsley, Recreational Boaters of CA.

PWIA representative

Jen Jolly, MBNMS

Dan Haifley, MBNMS SAC

Dan Temko, Pillar Point Harbor

Mike Kimsey or Tim Duff, SM Surfrider

Sean Smith, Bluewater Network

Tim Olivas, CDFG

**Timeline:** December 2002 – April 2003

### Outcomes and Products:

- Revision of MPWC definition
- Identify allowed uses of MPWC within the MBNMS and need for some or all of existing MPWC zones, and the buoy demarcation system
- Program for effective enforcement and education on the allowable (or prohibited) MPWC uses

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## Issue Name: Wildlife Disturbance – Tidepools

### Issue Description:

The MBNMS currently lacks an overall strategy to address impacts to tidepools from human disturbance. Removal of living and nonliving tidepool resources continues to occur in areas of high traffic. During scoping meetings, the public raised concerns about disturbance to the tidepools in many different areas of the Sanctuary including Pacific Grove, Monterey, Big Sur (Pfeifer Beach), and Fitzgerald Marine Reserve. Concerns included trampling of the resources and removal of certain intertidal species or shells that can provide habitat.

In response to public concern about the degradation of tidepool habitats in Pacific Grove, a citizen based Point Pinos Tidepool Task Force was established, in which the Sanctuary participates. This group is focused on improving public awareness about tidepool conservation through both signage and on-site volunteer interpreters; and conducting research about the role of human impact in changes that occur in rocky intertidal communities. The Sanctuary currently has several educational signs placed throughout tidepool access areas in Pacific Grove. The signs provide information about tidepools, and proper etiquette, aimed at reducing impacts to the heavily visited locations.

Other areas of the Sanctuary do not have significant monitoring and enforcement, signage or educational outreach strategies. To address this issue the MBNMS will develop a framework to work with local communities to develop guidelines and comprehensive educational and outreach strategies.



## Monterey Bay Issue Work Plan

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### Working Group Contact:

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### Working Group Participation:

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Paul Reilly, MBNMS SAC  
Lynn Rhodes, MBNMS SAC  
Berkeley White, MBNMS SAC  
Art Seavey, Aquaculture  
Kelly Huber, Fitzgerald Marine Reserve  
Mary DeWolfe, Fitzgerald Marine Reserve  
Pete Raimondi, UCSC  
John O'Sullivan, Monterey Bay Aquarium  
Mary Trotter, Big Sur LUAC  
PG Tidepool Coalition

Andrew DeVogelaere, MBNMS  
Liz Love, MBNMS  
Harriet Mitteldorf, MBNMS SAC  
Dave Ebert, MBNMS SAC  
Ron Massengill, MBNMS SAC  
John Pearse, UCSC  
Robin Stierwalt-Booth  
Fleur O'Neill, Save Our Shores  
Milos Radakovich, BAYNET  
Sam Hertzburg, San Mateo County  
CDFG  
Enforcement Representative

**Timeline:** January 2003 – April 2003

### Outcomes and Products:

- Framework to develop tidepool interaction guidelines, education, outreach programs

**Appendix 1: MBNMS Water Quality Protection Program Committee**

1. National Oceanic and Atmospheric Administration (MBNMS)
2. Natural Resource Conservation Service (USDA)
3. U.S. Environmental Protection Agency
4. California Coastal Commission
5. California Department of Fish and Game
6. California Environmental Protection Agency
7. California Resources Agency
8. Central Coast Regional Water Quality Control Board
9. San Francisco Bay Regional Water Quality Control Board
10. Elkhorn Slough National Estuarine Research Reserve
11. State Water Resources Control Board
12. University of California Cooperative Extension
13. Association of Monterey Bay Area Governments
14. City of Monterey
15. Monterey County
16. Santa Cruz County
17. Santa Cruz Port District
18. San Luis Obispo County
19. San Mateo County
20. SAC Agriculture Representative
21. Central Coast Farm Bureau Coalition
22. Watershed Institute
23. Ocean Conservancy
24. Monterey County Hospitality Association
25. Duke Energy
26. Save Our Shores