

Member/Alternate

Tourism

Lauri Baker / Monica Baker

Business

William Spicer / William Agosta

Non-Consumptive Recreation
Warren Glaser / W. Scott Dunn

Commercial Fishing

Chris Hoeflinger / Jim Marshall

Recreational Fishing

Merit McCrea / Stephen Roberson

Education

Craig Taylor / Barbara LaCorte

Research

Dr. Robert Warner / Dr. Daniel Brumbaugh

Conservation

Linda Krop / Greg Helms

Public At-Large 1

Jim Knowlton / Phyllis Grifman

Public At-Large 2

Eric Kett / Matthew Lum

Chumash Community

Ricardo Melendez / Paulette Cabugos

National Marine Fisheries Service

Mark Helvey / Lyle Enriquez

National Park Service

Russell Galipeau / Gary Davis

U.S. Coast Guard

Lt. Jerrel Russell / John Luzader

Minerals Management Service

Joan Barminski / Dr. Fred Piltz

U.S. Department of Defense

Alex Stone / Walter Schobel

California Department of Fish and Game

Marija Vojkovich / Kristine Barsky

California Resources Agency

Brian Baird / Leah Akins

California Coastal Commission

Rebecca Roth / Gary Timm

County of Santa Barbara

Dianne Meester / Jackie Campbell

County of Ventura

Lyn Krieger / Jack Peveler

Channel Islands Nat'l Marine Sanctuary

Chris Mobley

Monterey Bay Nat'l Marine Sanctuary

William Douros / Sean Morton

Gulf of the Farallones Nat'l Marine Sanctuary

Maria Brown

Chair

Dianne Meester

Vice Chair

Linda Krop

Secretary

Eric Kett

Sanctuary Advisory Council

CHANNEL ISLANDS NATIONAL MARINE SANCTUARY

April 8, 2005

Mr. Chris Mobley

Manager, Channel Islands National Marine Sanctuary

113 Harbor Way, Suite 150

Santa Barbara, CA 93109

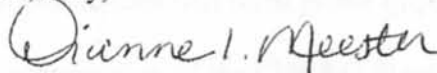
Dear Mr. Mobley:

In February 2005 members of the Sanctuary Advisory Council's Research Activities Panel (RAP) carefully reviewed the Channel Islands Marine Protected Areas Monitoring Plan produced by the California Department of Fish and Game in 2002. Representatives present at the RAP's public meeting were very knowledgeable about biological monitoring programs currently in place or proposed, and as such this group was able to offer insightful comments with regard to sustaining and improving these important programs.

At the Sanctuary Advisory Council's meeting on March 18, 2005, the Council discussed at length the RAP's findings and recommendations. With unanimous support from all voting seats present, the Council adopted the RAP's recommendations and moved to transmit them to you and other key monitoring program partners. Attachment 1 to this letter provides the RAP's detailed recommendations.

We hope that these recommendations will be helpful to you and the many agencies and organizations involved with planning, funding, and implementing biological monitoring programs to support marine protected areas in the Sanctuary. We look forward to continued reports from your staff and partners on monitoring results, and welcome the chance to offer advice as needed.

Sincerely,

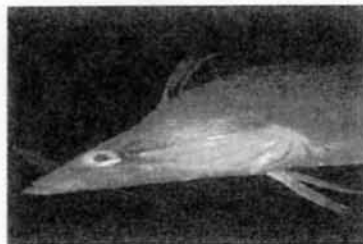


Dianne Meester, Sanctuary Advisory Council Chair

cc: Dan Basta, Director, NOAA National Marine Sanctuary Program
Ryan Broddrick, Director, California Department of Fish and Game
John Ugoretz, California Department of Fish and Game
Russell Galipeau, Superintendent, Channel Islands National Park
Steve Gaines, Director, UCSB Marine Science Institute and Principal Investigator, Partnership for Interdisciplinary Studies of Coastal Oceans

Attachment 1: Research Activities Panel recommendations

Attachment 2: Voting seats participating at the March 18, 2005 SAC meeting.



113 Harbor Way ■ Santa Barbara, CA 93109 ■ Phone (805) 966-7107

Fax (805) 568-1582 ■ www.cinms.nos.noaa.gov/sachome1.html

Research Activities Panel

A Working Group of the Channel Islands National Marine Sanctuary Advisory Council

Review of 2004 monitoring and recommendations for future activity relative to the Channel Islands Marine Protected Areas Monitoring Plan (CDF&G, 2/04): a report to the Channel Islands National Marine Sanctuary Advisory Council, CINMS director and staff, California Department of Fish and Game, and potential funding agencies.

Compiled by Satie Airame (UCSB-PISCO), Natalie Senyk (CINMS), and Robert Warner (RAP Chair) from a meeting of the RAP on February 2, 2005.

Background: In Fall of 2004 the CINMS Advisory Council and CINMS staff requested that the RAP review biological monitoring activities occurring within the network of marine reserves established in State waters that were implemented in April 2003. We chose to use the Channel Islands Marine Protected Areas Monitoring Plan (CDF&G, 2/04) as a framework for our discussion. Given the list of specific biological monitoring activities in the plan, we asked which activities are actually taking place, and whether these were at the proper level of activity and funding. We also asked whether funding was adequate and secure to continue monitoring into the future, and attempted to set priorities for future funding. We also asked what provisions are in place for data gathering, analysis, synthesis, and oversight.

Note that we did not engage in a wide-ranging discussion of other potential monitoring activities, although we do mention some neglected areas at the end of this document. The CDF&G document also contains a plan for social and economic monitoring, but the RAP did not discuss this part of overall monitoring. This is not because we consider such monitoring less important; for many stakeholders, the socioeconomic data will be of prime importance.

Our specific comments follow the organization of the CDF&G Plan:

III. Biological Monitoring

A. Shallow subtidal monitoring

1. SCUBA monitoring

SCUBA surveys are conducted on rocky reef habitats, most using a specific set of protocols developed by PISCO and CRANE. The National Park Service (NPS) uses a somewhat different protocol in their Kelp Forest Monitoring Program, but plans to modify its fish-counting protocols to conform to the PISCO/CRANE model in 2005.

In 2004, the combined efforts of PISCO/CRANE and NPS provided comprehensive coverage of monitoring sites inside and outside of reserves over all of the islands. However, the CRANE funding was one-time, and **there will be significant gaps in future subtidal monitoring unless funding can be secured.** The monitoring sites on San Miguel (SMI) and Santa Rosa (SRI) are in danger of being lost, and this is of particular concern since they represent the only source of information about responses to protection in the western colder-water biogeographic area. CDF&G specifies that shallow subtidal monitoring is of the highest priority, and **funding this work is of correspondingly high priority.**

The shortfall in this area may be partially offset by a new program for intensive monitoring funded by the NPS. As currently envisioned, this program would concentrate on warmer-water sites in the eastern Channel Islands (including Santa Barbara Island). The RAP would encourage consideration of including a set of sites on SRI or SMI in this program.

If funding shortfalls are chronic, the **RAP recommends developing a set of core sites to be done every year and adding additional sites as funding becomes available.** These core sites should cover all islands, and be a subset of sites monitored in 2004. Preference should be given to areas that have been monitored for a long periods, with equal attention to areas inside and outside of MPAs.

Other factors: **It is important to determine where fishing is occurring within the Sanctuary,** because this variable is needed as a covariate in analyses of ecological data. We need to know what type of fishing occurs, and where. The Sanctuary may be able to determine where fishing activity occurs through the SAMSAP program.

Species coverage: With a few exceptions (see below), **the list of species being monitored by the subtidal SCUBA surveys is comprehensive,** and should be adequate to detect changes as they occur in reserves relative to reference areas. If constraints prevent full surveys from taking place, then it may be possible to identify a subset of key species that could serve as efficient indicators of change.

Of the species of concern listed within the CDF&G plan, the subtidal **SCUBA surveys are not as effective in monitoring lobsters, cabezon, or abalone.** Lobsters in particular are expected to respond to the absence of fishing pressure, and this places special value on the development of a Trap/Fixed Gear monitoring scheme, discussed next.

2. Trap/Fixed Gear

While **the CDF&G plan included monitoring using traps and fixed gear, none actually occurred in 2004.** Trap and fixed gear surveys offer an important complement to SCUBA surveys because they catch species that are not adequately monitored otherwise. They also provide specimens in hand to weigh or tag for movement and survival studies. Importantly, they are the best candidates for cooperative research involving fishermen, and the data can provide direct estimates of gradients in catch per unit effort from inside to outside of reserves.

The RAP strongly recommends the establishment of trap/fixed gear monitoring schemes for at least some reserve-reference site combinations within the CINMS. Funding sources for

collaborative research programs (such as the Channel Islands National Marine Sanctuary Foundation) are generally different from those providing funding for standard biological monitoring, so there is a minimum of funding competition between this aspect of monitoring and others. When selecting collaborative research programs to fund, the RAP recommends giving high priority to those programs that target species that are not adequately monitored by other means. Trapping programs also provide the opportunity for tagging focal species, and the inclusion of tagging for estimates of adult movement and mortality would increase the value of the project.

3. Newly-settled Fish Surveys

An array of PISCO Standardized Monitoring Units for Recruitment of Fishes (SMURF) was deployed in 2004, inside and outside of reserves on ANA, SCI, SRI, and SMI. As designed, **the SMURF array provides valuable information on year-to-year spatial and temporal variability in recruitment of fishes, but is likely not dense enough to be able to detect a spatial effect of reserve production on recruitment.** A funding request to Sea Grant for a denser array of SMURFs to monitor for this possibility was denied in 2004.

RAP comment: monitoring of recruitment is important because it establishes an age-zero baseline to follow age classes through marine reserves. Recruitment data for other species emerge from the standard yearly subtidal surveys, because size-specific data are recorded. While the SMURF and standard subtidal surveys may reveal reserve effects on recruitment, **the RAP notes that there are no existing monitoring programs specifically designed to detect reserve effects on larval export.**

4. Annual Kelp Aerial Surveys

CI-CORE (Center for Integrative Coastal Observation, Research and Education, Moss Landing; Dick Zimmerman) performs multi-spectral aerial surveys of kelp along the central coast. Surveys were conducted as far south as Santa Barbara in 2004, including the Channel Islands. Surveys were also taken in 1999, 2002, and 2003. This program is expected to continue, and provides a large-scale information on the relative stability of kelp beds inside and outside of reserves.

5. Annual ROV surveys

See below, under Deep Subtidal Monitoring

B. Deep subtidal monitoring

1. ROV/Submersible monitoring

ROV: Some deep subtidal activity occurred in 2003/2004. CDF&G conducted three ROV developmental surveys in deeper water (20-80 m) in Nov 2003 and May 2004. In Sept 2004 full surveys were conducted with replication at Gull Island, Santa Cruz, Carrington Point, and Santa Rosa. The target for 2005 is 5 pairs of sites, inside and outside of existing marine reserves: 1 site

at ANA, 2 at SCI and 2 sites at SRI. It was not clear whether funding existed for this expanded program. Some data now exist that indicate that ROV surveys can be used in a monitoring scheme (returning to a specific site, running a specified transect), but post-processing time can be prohibitive, and species identification can be problematic.

Deep submersible: Most of this activity is associated with oil platform work. In 2004, the Sanctuary provided 4 days on their vessel to do monitoring. Surveys have occurred at the Footprint, Gull Island, and the north shores of San Miguel and Anacapa Islands. Future funding to do oil platform surveys will continue, but the additional surveys done in MPAs depend on good weather. Bottom fishing is currently prohibited below 60 fa (through the rockfish conservation area), and thus it will be difficult to detect the differences between MPAs and non-MPA areas because all areas are currently closed. Submersible survey data also have significant post-processing time, but species identification tends to be better than the ROV.

RAP comments: **It is obvious that there has so far been no attempt at coordination of the ROV and Deep Submersible programs to produce a coherent monitoring scheme for the deep subtidal areas of the existing marine reserves in the CINMS.** The sampling sites vary from year to year, perhaps reflecting the lack of a dependable source of funding. Data processing also has been limited by post-processing costs.

The RAP recommends that the lead agency (CDF&G?) determine the best mix of ROV and Submersible approaches, and then focus on a minimum number of sites (paired inside and outside of reserves) with opportunistic sites added if funding available.

CDF&G designates deep subtidal monitoring as its second highest priority, and funding for this monitoring is often from outside of the agencies regularly supporting shallow subtidal or collaborative work. **There is a real need for the development of standard protocols so that repeated ROV and submersible surveys can be used for monitoring. There is also need for a calibration study to integrate data taken through different techniques (ROV, submersible, SCUBA).**

C. Rocky Intertidal monitoring

Rocky Intertidal monitoring within the CINMS has been conducted by CINP since the 1980's. The intertidal monitoring at the Channel Islands is part of a larger network of 70 long-term monitoring sites throughout California (Multi-Agency Rocky Intertidal Network (MARINE)). Long-term funding for MARINE has been provided primarily by NPS and MMS. In the future, the funding from MMS may be reduced. All data from MARINE partners are entered into a database developed by SCCWRP. Monitoring information and target species abundance trends are available at www.marine.gov. While the sites in the CINMS are not ideally situated to detect reserve effects, there is at present no funding to add additional sites. Since there is relatively little harvesting (e.g., mussels, owl limpets) occurring in intertidal areas in the CINMS, reserve effects may be minimal or indirect. Rocky intertidal monitoring will be higher priority for evaluating future mainland California reserves, where increased public access heightens collecting pressures.

RAP recommendation: **More intertidal surveys inside and outside MPAs (especially on SRI and SCI) should be added in the future, if funding becomes available.**

V. Administrative structure, staffing, and funding

Coordination of Biological Monitoring

While CDF&G has stated that monitoring programs will be coordinated by existing senior staff, it is clear that this is an immense, important task that may exceed Department resources. Some data analysis of 2004 monitoring results has been contracted by the Department, but it is not clear that the contractor will be able to synthesize, analyze, and consolidate data from all the monitoring activity occurring in the CINMS. Since documenting performance of reserves will be of central concern for many agencies and stakeholders over the coming years, the **RAP recommends that the Sanctuary place top priority on data management and synthesis.**

There is an urgent need for a data coordinator for the CINMS monitoring efforts to keep track of existing monitoring programs, manage data streams, analyze and archive data, and to prepare annual reports. This coordinator could work within the CDF&G, or within Sanctuary staff, as long as collaborative relationships are established between agencies. The RAI notes that the Sanctuary may be able to provide support for a person to coordinate the monitoring effort.

Annual reporting: **The RAP approved the concept that it function as the reviewing body for an annual report on monitoring efforts and results within the CINMS.** There is tentative approval of this concept from CDF&G, with full knowledge that the Department also has reporting obligations to the Fish and Game Commission. The RAP does not wish to place added burden on the reporting agencies, but is willing to help determine (in a constructive, collaborative fashion) if the monitoring plan is meeting its objectives and goals.

Additional considerations for monitoring

Monitoring shallow soft bottom habitats

Shallow soft bottom habitats (especially eelgrass (*Zostera*) beds) at the islands may be highly productive, and may act as nurseries for other areas. From previous surveys, we know where the eelgrass beds are located and their approximate sizes. Overall, there are a small number of eelgrass beds in the CINMS, and thus their cumulative effect may be small, but we simply do not know their impact on local production. Certainly, some of these areas have been subject to harvesting in the past (e.g., crab trapping and sport fishing), and thus may respond to protection. There may be an opportunity to establish a program of shallow subtidal monitoring of soft sediment communities through ChannelKeeper (Jessie Altstatt, NOAA funds).

RAP recommendations: **develop a protocol for monitoring soft bottom communities, particularly eelgrass beds, and maintain program in as many sites as is practicable.** If possible, determine the importance of these habitats in system dynamics.

List of voting seats participating in the March 18, 2005 Channel Islands National Marine Sanctuary Advisory Council approval of the Research Activities Panel's recommendations on biological monitoring programs supporting Channel Islands marine protected areas.

Voting Seat	Voting Record
Tourism	Yes
Non-Consumptive Recreation	Yes
Business	Yes
Conservation	Yes
Commercial Fishing	Yes
Recreational Fishing	<not present>
Education	<not present>
Research	Yes
Public At-Large #1	Yes
Public At-Large #2	Yes
National Marine Fisheries Service	Yes
National Park Service	Yes
US Coast Guard	Yes
Minerals Management Service	<not present>
Department of Defense	Yes
California Department of Fish and Game	Yes
California Resources Agency	<not present>
California Coastal Commission	Yes
County of Santa Barbara	Yes
Ventura County	Yes