

History of the Community-Based Process on Marine Reserves at the Channel Islands National Marine Sanctuary 1999-2001

Background

In 1999, the California Fish and Game Commission received a recommendation to create marine reserves, or no-take zones, around the northern Channel Islands (Santa Barbara, Anacapa, Santa Cruz, Santa Rosa and San Miguel Islands). In response to this proposal and the need for a process, the Channel Islands National Marine Sanctuary (Sanctuary) and the California Department of Fish and Game (Department) developed a joint federal and state partnership to consider the establishment of marine reserves in the Sanctuary. The Channel Islands National Marine Sanctuary Advisory Council (SAC), an advisory body to the Sanctuary Manager, created a stakeholder based community group called the Marine Reserves Working Group (MRWG) in July, 1999. The MRWG membership, which was set by the SAC, was designed to represent the full range of community perspectives, including representatives of the public-at-large, commercial fishing interests, recreational fishing and diving, and non-consumptive interests. The MRWG was comprised of 17 members, which included five members from the SAC. The SAC also created a Science Advisory Panel and a Socio-Economic Panel to provide technical expertise and guidance. The MRWG collaborated over 22 months, from July 1999 to May 2001, seeking agreement on a recommendation to the SAC regarding the potential establishment of marine reserves (no-take zones) within the Channel Islands area.

During the MRWG's deliberations, the Sanctuary and Department jointly sponsored the process by hosting and co-chairing monthly meetings, providing funds for facilitation services and contract staff, contributing data and the full time services of agency personnel. Several offices within NOAA's National Ocean Service provided technical expertise, including the Special Projects Office and the Coastal Services Center. The Channel Islands National Park provided additional funds for facilitation services, invaluable data and support from several staff members. MRWG and Science Panel members volunteered their time and effort.

Overview of the Community-Based Process

As originally envisioned by the Sanctuary and the Department in early 1999, the Channel Islands Marine Reserves Process was, by design, set up to provide a publicly accessible forum within which stakeholders and resource agencies could draw on the best available scientific and socio-economic information to reach agreements and develop recommendations regarding the possibility of establishing marine reserves (no take zones) within the Channel Islands National Marine Sanctuary. A flowchart of the process is shown in **Figure 1**.

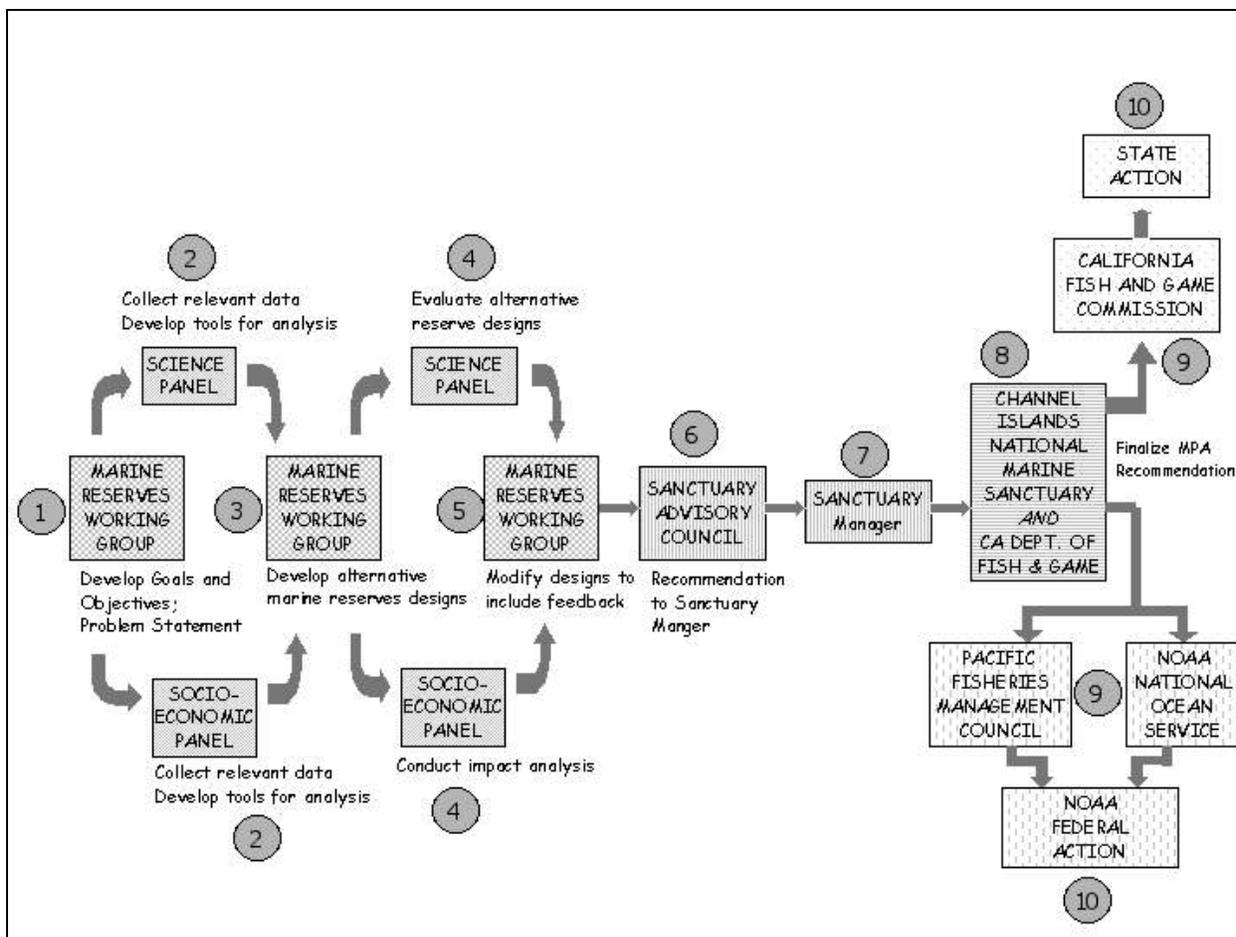


Figure 1. Channel Islands Marine Reserves Process Flowchart

Formation and Composition of the MRWG

The Sanctuary Advisory Council (SAC) established the initial membership of the MRWG in the Spring of 1999. Five SAC members requested to serve on the MRWG, while the other 12 members of the 17-person group were nominated and approved for membership by majority votes of the SAC. Neither the Department nor the Sanctuary management or staff were involved in setting the membership of the MRWG. Subsequent designations of alternate members and replacements for departed members were handled directly by the MRWG, subject to final ratification by the SAC. A list of MRWG members and their affiliations is presented in Table 1.

The membership of the MRWG was established by the Sanctuary Advisory Council with the intention of having a range of community and stakeholder perspectives being represented. These included the public-at-large, commercial fishing and diving interests, recreational fishing and diving, and conservation interests. The SAC sought to have relative parity between members representing consumptive and non-consumptive interests on the MRWG. However, because it was envisioned that the group would develop its recommendations through consensus, achieving a perfect numerical balance on the MRWG was not considered essential for a fair process.

Table 1. Marine Reserves Working Group Membership

Name	Affiliation	Representing
Patricia Wolf (Co-Chair)	California Department of Fish and Game	CA Dept. of Fish and Game
Matthew Pickett Co-Chair	Sanctuary Manager	CINMS
Greg Helms	Center for Marine Conservation	Conservation
Steve Roberson	Channel Is. Marine Resource Restoration Committee	Conservation
Shawn Kelly	Surfrider Foundation	Conservation
Chris Miller	CA Lobster Trappers Association	Consumptive
Neil Guglielmo	Squid seiner and processor	Consumptive
Dale Glanz	ISP Alginates	Consumptive
Tom Raftican	United Anglers	Consumptive
Marla Daily	Sanctuary Advisory Council	Public at large
Craig Fusaro	Sanctuary Advisory Council	Public at large
Gary Davis	National Park Service	National Park Service
Mark Helvey	National Marine Fisheries Service	NMFS
Deborah McArdle	California Sea Grant	California Sea Grant
Locky Brown	Channel Islands Council of Divers	Sport Diving
Robert Fletcher	Sportfishing Association of CA	Marinas/Businesses
Former Members:		
Ed Cassano Former Co-Chair	Former Sanctuary Manager	CINMS
Alicia Stratton	Surfrider Foundation	Conservation
Michael McGinnis	UCSB Ocean & Coastal Policy Center	Conservation

Scientific Support Panels

Members of the Science Advisory Panel appear in Table 2.

Table 2. Science Advisory Panel

Name	Affiliation	Representing
Dr. Matthew Cahn, Chair	CSU Northridge	Public Policy
Dr. Bruce Kendall	UC Santa Barbara	Population Dynamics
Dr. Steve Schroeter	UC Santa Barbara	Invertebrate Zoology
Dr. Mark Carr	UC Santa Cruz	Ichthyology
Dr. Steve Murray	CSU Fullerton	Invertebrate Zoology
Dr. Dave Siegel	UC Santa Barbara	Physical Oceanography
Dr. Robert Warner	UC Santa Barbara	Marine Ecology
Dr. Daniel Reed	UC Santa Barbara	Marine Ecology
Dr. Allan Stewart-Oaten	UC Santa Barbara	Population Dynamics
Dr. Ed Dever	Scripps Institute	Physical Oceanography
Dan Richards	Channel Islands National Park	Invertebrate Zoology
Dr. Russ Vetter	National Marine Fisheries Service	Ichthyology
Dr. Steve Gaines	UC Santa Barbara	Invertebrate Zoology
Dr. Joan Roughgarden	Stanford University	Invertebrate Zoology
Dr. Libe Washburn	UC Santa Barbara	Physical Oceanography
Peter Haaker	CA Dept. of Fish and Game	Invertebrate Zoology

Science Panel members were selected by the Sanctuary Advisory Council using the following criteria: (1) local knowledge, (2) no published “agenda” on reserves, (3) breadth of disciplines, (4) geographic and institutional balance, (5) consideration of involvement with the NCEAS Reserve Theory Working Group, and (6) time available.

The Socio-Economic Panel collected and synthesized existing studies, records of catch or harvest, and other public information sources, as well new economic data. The Panel conducted an economic impact analysis study to show the MRWG the estimated impacts of various marine reserves scenarios. Members of the Socio-Economic Panel are listed in Table 3.

Table 3. Socio-Economic Panel

Name	Affiliation	Representing
Dr. Bob Leeworthy	NOAA Special Projects Office	Commercial Fisheries
Peter Wiley	NOAA Special Projects Office	Recreational Fisheries
Dr. Charles Kolstad	UC Santa Barbara	Charter/Party Boats
Dr. Craig Barilotti	Sea Foam Enterprises	Commercial Fisheries
Dr. Carolyn Pomeroy	UC Santa Cruz	Squid Fishery

Public Input

In the process of developing a recommendation, the MRWG met monthly for 22 months to develop consensus and to receive, weigh and integrate advice from its technical advisors (Science Advisory Panel and Socioeconomic Panel) and from the general public. To facilitate public participation, the MRWG sponsored three large public forums in Santa Barbara and Oxnard. Additionally, the Sanctuary Advisory Council hosted over a dozen public meetings in Ventura and Santa Barbara Counties. Upon receipt of the MRWG’s work the Sanctuary Advisory Council hosted two additional public meetings and an evening public forum. **Table 4** summarizes public meetings held throughout the MRWG process.

In addition to hosting public meetings, the MRWG process generated a lot of public comments. The majority of the comments that were mailed, e-mailed or faxed were sent to the offices of the Channel Islands National Marine Sanctuary. As of the last month of the MRWG’s deliberations, the summary of comments received was as follows:

As of May 15, 2001, the Channel Islands National Marine Sanctuary and California Department of Fish and Game received 9,161 public comments on the Channel Islands Marine Reserves Process. Public comments have been submitted as electronic mail, phone messages, letters, postcards, faxes, and comment forms during the monthly public meetings and forums.

There were 564 comments received in opposition to the establishment of marine reserves. Some of these comments suggested that no reserves be designated, while others called for reducing reserve size (e.g. not larger than 20%, 10%, 5%, etc.). Many comments supported restricting commercial fishing but not sportfishing or diving.

There were 8,597 comments received in support of establishing marine reserves in the Channel Islands National Marine Sanctuary. The majority suggested that at least 30% and up to 50% of the current sanctuary should be set aside in reserves to protect and replenish marine ecosystems.

Overall, 6% of the comments are in opposition to marine reserves (or less than a particular %) and 94% are in support of marine reserves. The majority of opposition comments came from within the tri-county region, with a few coming from other location within the state. Supportive comments came mostly from within the local area and the state. The balance of comments came from 46 states, and three foreign countries. Mass-or form mailings of letters, electronic mail and postcards were received and reflect both supporting and opposing viewpoints.

Throughout the MRWG process, the full collection of comments received was housed at the Channel Islands National Marine Sanctuary office and made available to MRWG members. Additionally, the public comments provided at meetings were summarized by staff and shared with members of the MRWG for their consideration.

Table 4. Public Meetings, Marine Reserves Process, March 1999 – June, 2001

Community Group	Meeting Dates	Major Meeting Topics
Sanctuary Advisory Council (SAC)	June 19, 2001	SAC marine reserves deliberation – forwarded recommendation to Manager
SAC Fishing Working Group	June 16, 2001	Fishing Working Group updates and suggestions for Marine Reserves Process
Marine Reserves Working Group & Sanctuary Advisory Council (SAC)	May 23, 2001	Transmission of final MRWG work to the Sanctuary Advisory Council; Marine Reserves Public Forum - Approximately 300 in attendance
Conservation Working Group	May 21, 2001	Conservation Working Group updates and suggestions for Marine Reserves Process
Marine Reserves Working Group	May 16, 2001	Final MRWG meeting; agreements on a recommendation to the SAC
SAC Fishing Working Group	May 14, 2001	Fishing Working Group updates and suggestions for Marine Reserves Process
Marine Reserves Working Group	April 18, 2001	Developing a Preferred Reserve network option
Marine Reserves Working Group	March 21, 2001	Presentations from Science and Economic Panels and Evening Public Forum – Approximately 300 in attendance
Sanctuary Advisory Council (SAC)	March, 14, 2001	Sanctuary Advisory Council Marine Reserves Process update
SAC Conservation Working Group	March 12, 2001	Conservation Working Group updates and suggestions for Marine Reserves Process
Marine Reserves Working Group	Feb. 21, 2001	Developed Marine Reserve Scenarios
Marine Reserves Working Group	Feb. 15, 2001	Dealt with Unresolved Issues
Sanctuary Advisory Council (SAC)	Feb. 9, 2001	Sanctuary Advisory Council Marine Reserves Working Group update
SAC Conservation Working Group	Jan. 16, 2001	Conservation Working Group updates and suggestions for Marine Reserves Process
Marine Reserves Working Group	Jan. 16, 2001	Discussion with Science and Socioeconomic Panels
Marine Reserves Working Group	Dec. 14, 2000	Reached closure on Goals and Objectives, developed questions for technical panels
Sanctuary Advisory Council (SAC)	Nov. 16, 2000	Marine Reserves Working Group report and update on Marine Reserves Process
Marine Reserves Working Group	Nov. 15, 2000	MRWG revised work on Goals and Objectives
SAC Conservation Working Group	Nov. 14, 2000	Conservation Working Group updates and suggestions for Marine Reserves Process
Marine Reserves Working Group	Oct. 18, 2000	MRWG revised work on goals and objectives
Marine Reserves Working Group	Oct. 12, 2000	MRWG Public Forum – Approximately 300 in attendance
Marine Reserves Working Group	Sept 26-27, 2000	Received Socio-Economic and Science Panel data and recommendations; Crafted preliminary reserve scenarios
Sanctuary Advisory Council (SAC)	Sept 20, 2000	Sanctuary Advisory Council Marine Reserves Working Group Report
Marine Reserves Working Group	Aug. 22, 2000	Discussed data, worked on Goals and Objectives
Marine Reserves Working Group	July 18, 2000	Re-worked Goals and objectives, Science panel progress, refined overall process
Marine Reserves Working Group	June 22, 2000	Adopted Goals and Objectives (first time); Discussed data needs
Marine Reserves Working Group	June 8, 2000	MRWG Development of Goals and Objectives
Sanctuary Advisory Council (SAC)	April 19, 2000	Marine Reserves Science Panel, Socio Economic Panel and Working Group updates
Marine Reserves Working Group	April 13, 2000	Data needs discussion, set future process
Marine Reserves Working Group	March 16, 2000	Task groups, Goals and Objectives
Sanctuary Advisory Council (SAC)	March 15, 2000	Marine Reserves Working Group and Marine Reserves Process Update
Marine Reserves Working Group	Feb. 23, 2000	Response to Science Panel, worked on goals and objectives
Marine Reserves Working Group	Jan. 20, 2000	MRWG Public Forum – Approximately 200 in attendance
Marine Reserves Working Group	Jan 10-11, 2000	Joint meeting with Science and Socio economic panels, crafted goals & objectives
Marine Reserves Working Group	Dec. 9, 2000	Presentation from MWRG members regarding major issues
Sanctuary Advisory Council (SAC)	Nov. 18, 1999	Marine Reserves Science Panel, Socio Economic Panel and Working Group updates
Marine Reserves Working Group	Nov. 10, 1999	Discussed revisions and finalized ground rules
Marine Reserves Working Group	Oct. 21, 1999	Adopted draft ground rules

Community Group	Meeting Dates	Major Meeting Topics
Sanctuary Advisory Council (SAC)	Oct. 5, 1999	Sanctuary Advisory Council Marine Reserves Update
Sanctuary Advisory Council (SAC)	July 22, 1999	Sanctuary Advisory Council Marine Reserves Update
Marine Reserves Working Group	July 7, 1999	Introduction to the issue and proposed process
Sanctuary Advisory Council (SAC)	May 20, 1999	Initial Development of Marine Reserve Working Group and Science Panel
Sanctuary Advisory Council (SAC)	March, 25, 1999	Sanctuary Advisory Council update on Marine Reserve issue and SAC opportunity

Seeking Consensus

The MRWG agreed to work together by using a professionally facilitated consensus-based approach requiring that the legitimate concerns of all members be satisfactorily addressed before the group as a whole could reach agreement. Consensus is a process used to reach the highest level of agreement without dividing the participants into factions. Everyone on the MRWG utilized their best efforts to craft agreements that balanced the achievement of a set of explicit goals and objectives that were developed in response to a problem statement that guided the group as a whole. Therefore, the areas of agreement reached by the Marine Reserve Working Group represent the achievement of consensus, which by the group's definition meant that each member could state that "whether or not I prefer this decision above all others, I will support it because it was reached fairly and openly."

The MRWG's choice to work toward consensus was one important process element among a larger set of guidelines contained within a set of ground rules. Process ground rules were originally introduced by the group's facilitation team, and subsequently refined and adopted by the MRWG. These ground rules, which are available on line at: www.cinms.nos.noaa.gov, provided specific protocols and clarity on the group's mission, decision-making process, roles and responsibilities, handling of public participation, media interactions, and other elements.

MRWG Mission

Very early in the community process, the MRWG agreed by consensus on the following mission statement:

Using the best ecological and socioeconomic and other available information, the Marine Reserve Working Group (MRWG) will collaborate to seek agreement on a recommendation to the Sanctuary Advisory Council regarding the potential establishment of marine reserves¹ within the Channel Islands National Marine Sanctuary area.

Understanding the Problem

Fundamental to the MRWG's ability to develop goals, objectives, maps, and implementation recommendations was their consensus agreement on the following problem statement:

The urbanization of southern California has significantly increased the number of people visiting the coastal zone and using its resources. This has increased human demands on the ocean, including commercial and recreational fishing, as well as wildlife viewing and

¹ A marine reserve was defined by the Marine Reserves Working Group as a "No Take" zone.

other activities. A burgeoning coastal population has also greatly increased the use of our coastal waters as receiving areas for human, industrial, and agricultural wastes. In addition, new technologies have increased the efficiency, effectiveness, and yield of sport and commercial fisheries. Concurrently there have been wide scale natural phenomena such as El Nino weather patterns, oceanographic regime shifts, and dramatic fluctuations in pinniped populations.

In recognizing the scarcity of many marine organisms relative to past abundance, any of the above factors could play a role. Everyone concerned desires to better understand the effects of the individual factors and their interactions, to reverse or stop trends of resource decline, and to restore the integrity and resilience of impaired ecosystems.

To protect, maintain, restore, and enhance living marine resources, it is necessary to develop new management strategies that encompass an ecosystem perspective and promote collaboration between competing interests. One strategy is to develop reserves where all harvest is prohibited. Reserves provide a precautionary measure against the possible impacts of an expanding human population and management uncertainties, offer education and research opportunities, and provide reference areas to measure non-harvesting impacts.

Goals and Objectives

The MRWG worked for many months to define a set of agreed-upon expectations for the marine reserves. In achieving a consensus agreement on a set of goals and objectives, the MRWG was then better able to proceed with negotiations. Additionally, the definition of goals and objectives provided guidance needed by the Science Advisory Panel, a SAC-appointed technical advisory group to the MRWG. The MRWG's goals and objectives for marine reserves are presented in Table 5.

Table 5. MRWG-Adopted Goals and Objectives for Marine Reserves

Goal	Objectives for Marine Reserves in the Channel Islands
<p><u>Ecosystem Biodiversity Goal</u> <i>To protect representative and unique marine habitats, ecological processes, and populations of interest.</i></p>	<ol style="list-style-type: none"> 1. To include representative marine habitats, ecological processes, and populations of interest. 2. To identify and protect multiple levels of diversity (e.g. species, habitats, biogeographic provinces, trophic structure). 3. To provide a buffer for species of interest against the impacts of environmental fluctuations. 4. To identify and incorporate representative and unique marine habitats. 5. To set aside areas which provide physical, biological, and chemical functions. 6. To enhance long-term biological productivity. 7. To minimize short-term loss of biological productivity.
<p><u>Socio-Economic Goal</u> <i>To maintain long-term socioeconomic viability while minimizing short-term socioeconomic losses to all users and dependent parties.</i></p>	<ol style="list-style-type: none"> 1. To provide long-term benefits for all users and dependent parties. 2. To minimize and equitably share short-term loss in activity for all users and dependent parties. 3. To maintain the social and economic diversity of marine resources harvest by equitably sharing the loss of access to harvest grounds among all parties to the extent practical when designing reserves. 4. To address unavoidable socioeconomic losses created by reserve placement through social programs and management policy.
<p><u>Sustainable Fisheries Goal</u> To achieve sustainable fisheries by integrating marine reserves into fisheries management.</p>	<ol style="list-style-type: none"> 1. To increase abundance, distribution, reproductive capacity and individual sizes of harvested populations within marine reserves in the Channel Islands region. 2. To facilitate rebuilding and sustaining harvested populations. 3. To enhance spillover into non-reserve areas. 4. To establish a recognition program for sustainable fisheries in the Channel Islands region.
<p><u>Natural and Cultural Heritage</u> <i>To maintain areas for visitor, spiritual, and recreational opportunities which include cultural and ecological features and their associated values.</i></p>	<ol style="list-style-type: none"> 1. To conserve exceptional ecological and cultural resources that stimulate and encourage human interaction with the marine environment and promote recreational activities. 2. To conserve outstanding areas that encompass seascape, adjoining coastal landscapes, or possesses other scenic or visual qualities. 3. To maintain submerged remnants of past life that are of special historical, cultural, archeological, or paleontological value. 4. To maintain areas of particular importance that support traditional non-consumptive uses. 5. To maintain opportunities for outdoor recreation as well as the pursuit of activities of a spiritual or aesthetic nature. 6. To facilitate ease of access to natural features without compromising their value or uniqueness.
<p><u>Education Goal</u> <i>To foster stewardship of the marine environment by providing educational opportunities to increase awareness and encourage responsible use of resources.</i></p>	<ol style="list-style-type: none"> 1. To develop and distribute offsite interpretations and displays allowing indirect observation, study and appreciation of marine resources. 2. To provide current pamphlets, project ideas and worksheets for use on and offsite. 3. To promote personal and organized visits for direct observation and study. 4. To link monitoring and research projects to support classroom science curriculum.

Implementation Recommendations

Along with a well-thought set of goals and objectives, another valuable MRWG outcome that was reached by consensus was a set of recommendations for successful implementation and management of marine reserves. The MRWG spent ample time developing specific recommendations on how a system of marine reserves should be enforced, monitored, support educational goals, involve the community, and generally administered. These implementation recommendations are presented here.

Table 6. MRWG Implementation Recommendations

MRWG Implementation Recommendations
Monitoring, Evaluation, and Assessment Recommendations
<p>Purpose:</p> <ol style="list-style-type: none"> 1. To understand ecosystem functions in order to distinguish natural processes from human impacts; 2. To monitor and evaluate the short- and long-term effectiveness of reserves for managing living marine resources including harvested populations; 3. To widely publicize the results of findings of monitoring and evaluation efforts. <p>For Biodiversity</p> <ol style="list-style-type: none"> 1. Design reserves that will be tractable for monitoring of biological and physical processes; 2. Establish long-term monitoring of ecological patterns and processes in, adjacent to, and distant from marine reserves; 3. Evaluate short- and long-term differences between reserve and non-reserve areas; 4. Study the effects of marine mammal predation on marine populations in, adjacent to and distant from reserves; 5. Provide for water quality testing near and distant from reserves; 6. Monitor ecosystem structure and functioning along gradients of human activities and impacts; 7. Develop methods for evaluating ecosystem integrity. <p>For Fisheries Management</p> <ol style="list-style-type: none"> 1. Evaluate the short- and long-term effectiveness of reserves as an integrated fisheries management tool; 2. Develop and adopt a monitoring, evaluation and data management plan for goals and objectives that explicitly contribute to "adaptive management"; 3. Provide long-term continuity in effort, expertise, and funding during reserve monitoring and evaluation; 4. Establish long-term resource monitoring programs in, adjacent to, and distant from reserves; 5. Monitor impacts of reserves on commercial and recreational industries; 6. Provide for the systematic study of near shore species, including (1) larval export, (2) adult migration, (3) relative abundance, (4) size-frequency distributions, and (5) other topics of interest, for stock assessment purposes; 7. Monitor reserves to test their ability to: <ul style="list-style-type: none"> ▪ replenish and recover marine populations of interest including harvested populations; ▪ export larvae and adult individuals to areas outside reserve boundaries; ▪ document changes of catch characteristics of users adjacent to and distant from reserves; ▪ study and evaluate the effects of predators on marine populations in, adjacent to, and distant from reserves. <p>For Socioeconomic Impacts</p> <ol style="list-style-type: none"> 1. Provide an opportunity to monitor and evaluate the benefits and impacts to all users and dependent parties inside, adjacent to, and distant from reserves.

Reserve Administration Recommendations

Purpose: To effectively respond to the "Problem Statement" and achieve the goals and objectives of this program of marine reserves through:

1. Effective agency coordination and accountability
2. Adequate funding
3. Appropriate enforcement practices
4. Community oversight
5. Data management

Agency Coordination and Accountability

1. Create and adopt interagency Memoranda of Understanding (MOU), Memoranda of Agreement (MOA), or other means to memorialize agency commitment to the marine reserves program by the California DFG, CINMS, NMFS, FWS and NPS and other responsible agencies with jurisdiction.
2. Develop procedures to insure and maintain consistent interpretation, application and enforcement of regulations across agencies.
3. Continue efforts to protect the intent of these reserves from outside intervention and changes.

Funding

1. Develop cooperative interagency agreements (among CINMS, CINP, DFG and NMFS, and other agencies) to seek and commit annual funding and other in-kind assistance to support reserve administration.
2. Provide operational support and seek a dedicated funding stream to implement and maintain: marine reserve design, research, monitoring, and evaluation.
3. Develop a protocol in which each agency annually reports its contributions to the CINMS or other designated "lead" agencies reserve administration.
4. Explore the utilization of non-profit, research, and academic organizations and other implementation strategies as methods of institutionalizing long-term program funding.

Enforcement

1. Develop an enforcement Memorandum of Understanding (MOU) and cooperative interagency enforcement plan with the NMFS, DFG, CINP, CINMS, and Coast Guard.
2. Design clear and discernable reserve boundaries.
3. Enlist community participation in marine reserve management and enforcement in order to maximize the cost-effectiveness of the enforcement program.
4. Provide operational support and seek a dedicated funding stream to maintain an active presence on the water and in the air.
5. Develop explicit regulations and restriction that are clear and consistently interpreted.
6. Use "state of the art" enforcement resources, reserve dedicated officers, and vessels.

Community Oversight

Convene a standing community oversight committee to review implementation, the effectiveness of reserve administration and monitoring, and to ensure that community concerns can be expressed and addressed.

Data Management

1. Create and adopt interagency memoranda of understanding to define integrated management framework, responsibilities and accountability;
2. Seek commitments of adequate resources of time, funding, and expertise to assure adequate and ongoing monitoring, synthesis, interpretation, and reporting of information;
3. Undertake preliminary surveys to provide baseline information to gauge reserve performance;
4. Design monitoring strategies to produce definitive results through an explicit reporting process including clearly stated monitoring objectives to address priority issues, and quality assurance programs to ensure that type, amount, and quality of data meets research objectives;
5. Design a data management program that provides mechanisms to ensure data is processed, summarized, and reported to concerned individuals, organizations and agency representatives in an easily understood format on a regular (e.g., bi-annual) basis. Seek an ongoing funding base to maintain adequate data management capacity;
6. Design and implement a program for dissemination of information from ongoing studies in a useable and accessible format that can provide information for better environmental protection and management;
7. Design the monitoring and evaluation program with built in mechanisms for periodic review and that allows for program adjustments that are responsive when monitoring results or new information from other sources justifies program refinement.

Education Recommendations

1. Create an interagency (CINMS, DFG, FWS, NPS, NMFS) team of educators to create a coordinated plan for the development of interpretive programs, multimedia products, signs, brochures and curriculum materials related to marine reserves.
2. Develop a training program for staff and volunteers from the above agencies so that they have the tools and information they need to provide interpretation about marine reserves to the general public.
3. Integrate marine reserves educational materials into existing educational programs such as Sanctuary Naturalist Corps, Sanctuary Cruises, Great American Fish Count, etc.
4. Incorporate data from marine reserve research and monitoring projects into science curriculum materials and hold workshops to present this information to teachers.
5. Develop interagency Web site for Channel Islands Marine Reserves that is a portal to best available and most current information about marine reserves that could be used by the general public and school audiences.
6. Develop a program for organized public educational visits (such as diving, whale watching, nature photography, etc.) to marine reserves for direct observation and study.
7. Seek funding for interagency educational efforts described above.

MRWG Mapping Efforts

Over the course of the nearly two-year process, the MRWG developed over thirty potential marine reserve network maps. Maps were developed using a state-of-the-art Geographic Information System integrated with the latest socio-economic and environmental data. Using habitat, fisheries and economic data collected at a 1 mile by 1 mile scale for the entire CINMS, this flexible tool allowed the MRWG to quickly see the conservation and economic value contained within any potential reserve area.

The MRWG's final map was developed at their last meeting in May of 2001 (Figure 2). This final map was a composite of two ideas that the group was not able to merge into one by consensus. It is extremely important to note that the final map does not reflect any consensus agreement by the MRWG. No party to the MRWG, including the agency representatives, had an option to simply settle on the "overlap" areas contained in the composite map and regard them as an acceptable option, because the MRWG as a whole did not agree to that by consensus.

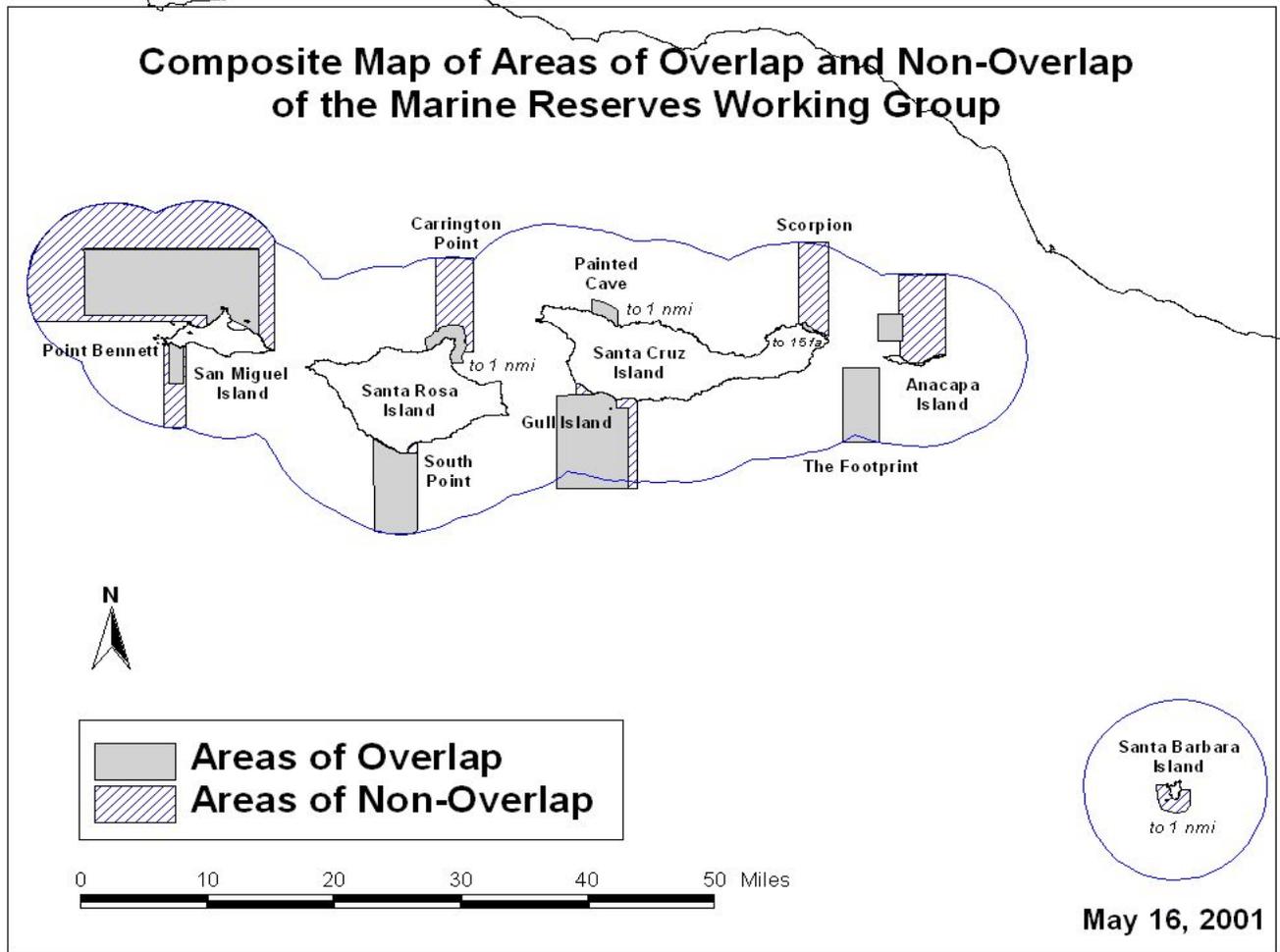


Figure 2. Final MRWG Map

MRWG Conclusion

On May 16, 2001, the MRWG decided to end their work together. As directed by the ground rules, the MRWG agreed to forward all areas of consensus, non-agreement and the composite map to the Sanctuary Advisory Council.

Sanctuary Advisory Council handling of MRWG Results

Following the completion of the MRWG's efforts in May 2001, the Channel Islands National Marine Sanctuary Advisory Council evaluated the MRWG's work and deliberated over the course of two public meetings and an evening public forum. The SAC then developed and forwarded a formal recommendation to the Sanctuary Manager concerning the Channel Islands marine reserves process. In their review of the MRWG's community-based process, the SAC issued the following statement on June 19, 2001:

"The Channel Islands National Marine Sanctuary Advisory Council (SAC) commends the CINMS staff, Department of Fish and Game (DFG) and all participants of the MRWG, Science and Socio-Economic Panels on their efforts over the past two years. The SAC

finds that the MRWG, in seeking consensus on marine reserves, developed scientific and socio-economic data that should be used and built upon in future consideration of such issues. The SAC finds that the MRWG process was open, inclusive and community based.”

Based on an understanding of the areas of agreement and disagreement reached by the MRWG, awareness of the expert input and review provided by technical panels (Science Advisory Panel and Socioeconomic Panel), and in consideration of extensive public comment on the issue, the Sanctuary Advisory Council provided a specific recommendation to the Sanctuary Manager on June 19, 2001. By a vote of 17-1-1, the Sanctuary Advisory Council agreed to:

- *Formally transmit the full public record of the MRWG and the SAC regarding the development of reserves in the CINMS to the Sanctuary Manager;*
- *Charge the Sanctuary Manager and Department of Fish and Game staff to craft a final recommendation consistent with the Marine Reserve Working Group’s consensus agreements for delivery to the Fish and Game Commission in August 2001;*
- *Request that the Sanctuary Manager and Department of Fish and Game work with the community to the maximum extent feasible in crafting this recommendation.*

Post-MRWG/SAC Agency Actions

Following the SAC’s advice, the Department and NOAA’s CINMS worked in partnership to finish the work of the MRWG and develop a completed recommendation to provide to the Fish and Game Commission. In developing that recommendation, the Department and CINMS continued to work closely with stakeholders. The resulting recommendation was developed with the intent to address and reflect the goals, interests and perspectives drawn out through the MRWG process, and based upon the current status of State and Federal legislation, regulations and jurisdictions.

A working draft recommendation was sent to the SAC, MRWG members and local fishing and environmental groups for input. This draft was changed based on a variety of comments raised. Figure 3 shows the working draft. The top five comments for each constituency, ranked in their order of priority, and the Department of Fish and Game and Sanctuary’s response follow the figure.

Top Priorities for Commercial Fishermen Addressed in the Preferred Alternative Priority 1:

- Reduce the size of Carrington Point SMR (Santa Rosa Island) on west and north sides to reduce impacts to commercial fisheries for lobster and urchin, and drift net fisheries.
Action: The Carrington Point SMR was reduced by 0.5 miles on the west and north sides.
- Priority 2: Reduce the length of the South Point SMR (Santa Rosa Island) on south side to reduce impacts to prawn fishers.
Action: The South Point SMR was reduced from 6 miles from the shore to 4 miles from shore.
- Priority 3: Remove the area from Abalone Point to East Point in the Skunk Point SMR (Santa Rosa Island) to reduce impacts to lobster, urchin, and nearshore livefish fisheries.
Action: The area between Abalone Point and East Point was removed from the Skunk

Point SMR.

- Priority 4: Move the east boundary of the Gull Island SMR (Santa Rosa Island) west to reduce impacts to urchin and kelp fisheries.
Action: The eastern boundary of the Gull Island SMR was moved 0.5 miles west to reduce impacts to urchin and kelp fisheries.
- Priority 5: Move the eastern boundary of the Harris Point SMR (San Miguel Island) west to Prince Island to reduce impact to crab fisheries.
Action: The limited impact to commercial crab fisheries at the Harris Point SMR (3.7% or \$12,834/year) does not justify removing protection for nearshore habitats along the northeast side of San Miguel Island. No change was made to the Preferred Alternative at Harris Point.

Top Priorities for Recreational Fishermen Addressed in the Preferred Alternative

- Priority 1: Leave the south side of Anacapa Island open to recreational fishing.
Action: The south side of Anacapa Island was left open to recreational and commercial fishers.
- Priority 2: Open the west side of Anacapa Island to recreational fishing for lobster and pelagic fish.
Action: A limited take area (West Anacapa SMCA) was established to allow recreational fishing for lobster and pelagic fish, and commercial fishing for lobster.
- Priority 3: Open Posa Anchorage (NW side of the Gull Island SMR, Santa Cruz Island).
Action: Posa Anchorage was removed from the working draft to allow recreational and commercial fishing.
- Priority 4: Move Scorpion SMR west to reduce impacts to recreational fishers on the eastern tip of Santa Cruz Island.
Action: The eastern boundary of Scorpion SMR was moved west to Little Scorpion Rock to reduce impacts to recreational fishers on the eastern tip of Santa Cruz Island.
- Priority 5: Open a portion of the Cowcod Closure around Santa Barbara Island to compensate for the impacts of placing a reserve in waters around Santa Barbara Island.
Action: A large area (approximately 50 nmi²) on the northeast side of Santa Barbara Island, previously closed to fishing below 120 fathoms, was opened to all types of fishing.

Top Priorities for Environmental Organizations and Other Community Members

- Priority 1: Only 2.8 nm² of kelp forest is protected in reserves in the Oregonian bioregion in the Draft. Additional kelp forest should be included in the final Recommended Alternative by extending the Judith Rock SMR eastward into the Tyler Bight, extending the South Point SMR to the west towards Bee Rock / Cluster point, adding reserve area in the Wycoff Ledge area, including a reserve area on the northwest portion of Santa Rosa Island (Talcott Shoals), and/or adding area to the west of the Carrington Point SMR. Incorporating these proposed changes is recommended to protect both the kelp itself and to harness its widely acknowledged ecological services to a host of other organisms (including commercially valuable species).
Action: It was not possible to increase the representation of kelp forest without greatly increasing the economic impact to lobster and urchin fisheries.
- Priority 2: A very poor representation of kelp forest is included in the Draft for the East end of the Sanctuary. This deficit undermines confidence that the reserve network will perform optimally and produce the expected benefits to Sanctuary users and resources. Additional kelp forest should be included, by including part of the extensive reef at Sandstone Point on Santa Cruz Island, and/or by adding a reserve area at Cat Rock on Anacapa Island.

Action: It was not possible to increase the representation of kelp forest without greatly increasing the economic impact to nearshore recreational and commercial fisheries.

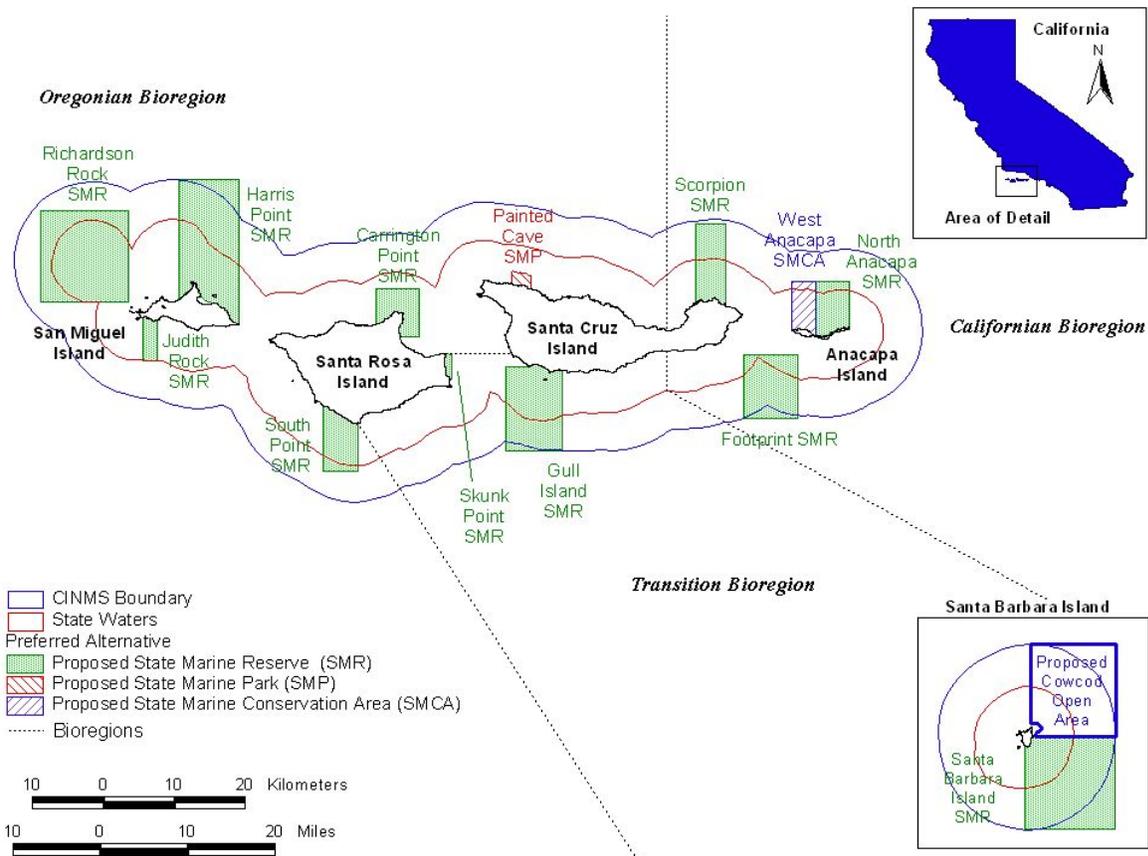
- Priority 3: Increase the representation of deep continental shelf habitat in the reserve network by adding a reserve from Sandstone Point (Santa Cruz Island) to the Sanctuary boundary.

Action: Additional protection for deep water habitat was added in the Richardson Rock SMR by extending the reserve one nautical mile to the west and north.

- Priority 4: There may be benefit to supplementing a robust system of no-take marine reserves with limited take areas; however the Draft recommendation insufficient to justify further inclusion of SMPs in the existing network for the Channel Islands.

Action: No additional SMPs were added to the Preferred Alternative Marine Protected Area Network for the Channel Islands National Marine Sanctuary.

In August, 2001, The Department, along with NOAA's Channel Islands National Marine Sanctuary, recommended the formation of a network of Marine Protected Areas (MPAs) around the Channel Islands. Consistent with the recommendation of the Sanctuary Advisory Council, the Sanctuary and Department submitted to the Fish and Game Commission the entire documented record of the community process, including MRWG maps and recommendations,



Science Panel documents and recommendations, Socio-Economic Panel information and analysis reports, and the complete public record of comments received on the issue.

Figure 3. Agency proposed Marine Protected Area network for the Channel Islands National Marine Sanctuary.

