



CALIFORNIA OCEAN PROTECTION COUNCIL

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MEMORANDUM

TO: California Ocean Protection Council

FROM: Drew Bohan, Executive Policy Officer
Brian Baird, Assistant Secretary for Ocean and Coastal Policy
Neal Fishman, Deputy Executive Officer

DATE: June 8, 2006

RE: Consideration of adoption of Strategic Plan (Agenda Item #6)

Requested Action

Staff recommends that the California Ocean Protection Council (“Council”) adopt the following resolution:

“The California Ocean Protection Council hereby adopts the *California Ocean Protection Council Strategic Plan*, attached, and authorizes the Secretary to the Council to finalize, and publish the document in a manner generally available to the Council and the public.”

Background

Late in 2005, Council staff began the task of developing a strategic plan for the OPC that would help to prioritize its activities over the next five years. In developing the plan, OPC staff (with assistance from the Center for Collaborative Policy at California State University, Sacramento) interviewed scores of stakeholders from public and private organizations, held several public meetings, and received numerous public comments. High level staff in various departments at both the Resources Agency and Cal EPA have scrutinized the document.

At its April 2006 meeting, the Council reviewed a draft of the plan and heard public testimony. At that time, the Council directed staff to further define top priorities for action and develop performance measures. This has been done in the document now before the Council.

Purpose and Organization of the Plan

The plan now before the Council sets out a vigorous program of protecting and restoring ocean and coastal resources to be carried out by a wide range of public and private organizations, with direct OPC involvement. Under the plan, OPC will lead some efforts, forming committees and science panels. In other cases it will assist other organizations with direct funding. The Council will also assist State departments in formulating budget proposals to the Governor and

Legislature, and will seek to link budgets together to ensure full and effective coverage of ocean and coastal issues. In some cases it will help to develop policies on issues ranging from governmental organization to specific regulatory policies. Using its special status as a cabinet-level council with broad focus on ocean and coastal issues, the Council will develop new solutions to what have been intractable problems.

There are three main sections to the plan: (1) an introduction and overview; (2) specific goals, objectives, and performance measures; and (3) tools that OPC can use to accomplish the goals and objectives. An appendix in the plan details a list of potential projects that may be priorities for funding future projects to accomplish the plan objectives. The list is not intended to be exhaustive of the priority projects or programs that can achieve the ends of the plan; rather, it provides concrete actions the Council may consider to address the numerous threats facing the California coastal ocean environment.

How the plan will be used

The Council and its staff may use the plan as a guide for actions over the next five years. Under the direction of the Executive Policy Officer and Council Secretary, staff assigned to OPC will immediately begin to undertake the measures for ocean and coastal protection called for in the plan. Staff will prioritize the use of funds based on the plan. Upon approval of the plan, all staff recommendations to the Council will refer how projects achieve the performance measures identified in the plan. Success will be measured in terms of the plan. The Council's steering and science committees, yet to be formed, will also be guided by the plan. The plan is intended to be a guide for action, not a reason for inaction. Thus, despite its importance as a planning document, valuable opportunities to further the broader goals of the Council may arise without specific reference to a program or problems identified in the strategic plan. In such instances, staff may bring proposals to the Council not contemplated in the plan. The opportunity to further the goals of the Council and the larger plan goals will nonetheless be noted in staff reports.

Next steps

Upon approval by the Council, the Secretary will publish the plan for wide public dissemination. Staff will seek to have the plan published in time for the California and the World Ocean conference in September. The recommendation before the Council would allow the Secretary to make non-substantive changes to the document prior to publication. This would include corrections of any typographical errors, minor grammatical corrections, and the inclusion of additional references, graphs, charts, illustrations, or maps. It would not include new priorities or actions. It is anticipated that the Secretary to the Council will use his delegated authority to provide funds to publish the plan and disseminate it to the public.

California Ocean Protection Council Five Year Strategic Plan

Summary

The California Ocean Protection Council (OPC) was created on September 23, 2004 when Governor Schwarzenegger signed the California Ocean Protection Act (COPA)¹ into law. This Strategic Plan identifies the goals, objectives and strategies OPC will implement over the next five years to protect ocean and coastal resources. In some cases, OPC will take a lead role managing an ocean or coastal resource issue of statewide importance; in others, it will provide or identify funding for specific initiatives; in still others, it will recommend needed changes to state or federal law or regulations.

OPC staff has developed this plan based on feedback from Ocean Protection Council members, relevant agencies, and stakeholders. Staff held workshops and conducted interviews to solicit comments on the draft plan. Section I provides an introduction and overview. Section II identifies OPC's priority goals and objectives. Section III describes the principal tools OPC will employ to achieve those goals. Appendix A is a comprehensive list of potential projects that OPC may support or consider funding. Appendix B is a glossary of acronyms. Appendix C is a list of workshop attendees and other individuals who were consulted during the strategic planning process.

I. Introduction

California is rich with productive and diverse ocean and coastal ecosystems that have benefited Californians and people across the nation in numerous ways. California's coast and ocean provide a broad range of critical goods and services, including marine fisheries, healthy seafood, abundant wildlife, recreational opportunities, and vibrant coastal communities. Some coastal ecosystems such as wetlands and kelp forests absorb nutrients or capture sediments from the land, thereby improving water quality and protecting important habitats. These ecosystems also serve as nursery and adult wildlife habitat, and they protect shoreside communities from floods and storms.

¹ Public Resources Code Section 35500 *et seq.*

A recent study by the National Ocean Economics Program valued California’s “ocean economy” at \$43 billion.² Our ocean economy supports a vibrant and growing tourism industry, a diverse fishing industry and other businesses. And of course California’s 1,100 miles of coastline provide other benefits to Californians, many of which cannot be measured in dollars and cents. The Legislature acknowledged the important economic and other contributions of our ocean and coastal resources in the first legislative finding of the California Ocean Protection Act, which states “California’s coastal and ocean resources are critical to the state’s environmental and economic security, and integral to the state’s high quality of life and culture.”³

To date, agencies responsible for protecting California’s ocean and coastal resources have had some notable successes. Point source pollution has been significantly reduced in the last three decades. Valuable coastal assets have been purchased and placed in the public trust. Coastal development has been guided by one of the most progressive coastal management programs in the country. And our understanding of the way natural systems work together has greatly improved.

Yet, despite these successes, significant challenges remain. California has world class beaches, but continues to suffer beach closures resulting from bacterial pollution. More than 90 percent of the state’s coastal wetlands, one our most valuable and productive resources, have been lost to filling, diking, and draining. Declining fish stocks have forced the federal government to impose significant restrictions on salmon and other types of

**Ocean Protection Council (OPC)
Membership and Staff**

OPC consists of the Secretaries for the Resources Agency and the California Environmental Protection Agency, the Chair of the State Lands Commission, and two nonvoting members, one appointed by the Senate and one appointed by the Assembly. Under the direction of the Secretary for Resources, who chairs OPC, the Executive Officer for the State Coastal Conservancy serves as the OPC Secretary. The Conservancy also provides OPC staff assistance.

The Executive Policy Officer will assume the lead role for strategic planning and implementation of OPC’s policies, initiatives and programs. The Executive Policy Officer will also be the primary liaison between OPC and all levels of government, academia, the private sector, and the non-governmental organization community.

The Science Advisor – hired in partnership with the California Ocean Science Trust (CalOST) – will work with OPC to create a standing Science Advisory Team to develop scientific recommendations on issues identified by OPC.

² According to the National Ocean Economics Program’s *California’s Ocean Economy, 2005*, of the \$43 billion of gross state product attributed to coastal industries, tourism and recreation accounted for 58%. Transportation, including ports, accounted for 34.5%. Construction, minerals, ship and boat building, and harvesting of marine life, accounted for the remaining activity. Tourism and recreation accounted for 76.8% of all coastal employment.

³ Public Resources Code Section 35505(a).

fishing.

These problems are not unique to California. In 2000, recognizing the threats to the nation's coastal resources, Congress established the U.S. Commission on Ocean Policy.⁴ Previously, the Pew Charitable Trusts created the Pew Oceans Commission⁵ to examine the range of issues facing our oceans and coasts. Both commissions were composed of some of the world's top scientists and policy experts. Each commission released a comprehensive report on the condition of our oceans. The two reports reached strikingly similar conclusions. The U.S. Commission's September 2004 final report to President Bush summarized the Commission's findings as follows:

Human ingenuity and ever-improving technologies have enabled us to exploit – and significantly alter – the ocean's bounty to meet society's escalating needs. Pollution runs off the land, degrading coastal waters and harming marine life. Fish populations are declining and some of our ocean's most majestic creatures have nearly disappeared. Along our coasts, habitats that are essential to fish and wildlife and provide valuable services to humanity continue to suffer significant losses. Non-native species are being introduced, both intentionally and accidentally, into distant areas, and the results are often damaging and costly. With these impacts come significant economic costs, risks to human health, and ecological consequences that we are only beginning to comprehend.

It has been thirty-five years since this nation's management of the oceans, coasts, and Great Lakes was comprehensively reviewed. In that time, significant changes have occurred in how we use marine assets and in our understanding of the consequences of our actions.

The good news is that Californians always rise to the challenge. A February 2006 statewide poll⁶ showed that 91 percent of Californians believe that the condition of the ocean and beaches in California is important to them personally. Acknowledging this strong support for ocean protection, the Legislature and the Governor responded with the California Ocean Protection Act.

Our challenge today is to recognize the problems we face, to ensure we have the tools we need to address them, and to use those tools appropriately. Much of the burden for developing and implementing solutions falls on state government agencies. The governor and Legislature created the Ocean Protection Council to examine all of the work that has been done to date to protect our precious ocean and coastal resources and to determine what's working and what's not.

State agencies charged with the responsibility of protecting our oceans perform a variety of functions. These include acquisition and preservation of wetlands, beaches, and other

⁴ The U.S. Commission on Ocean Policy. 2004. *An Ocean Blueprint for the 21st Century*. Available at <http://www.oceancommission.gov/>.

⁵ Pew Oceans Commission. 2003. *America's Living Oceans: Charting a Course for Sea Change. A Report to the Nation. Recommendations for a New Ocean Policy*. Available at: http://www.pewtrusts.org/pdf/env_pew_oceans_final_report.pdf

⁶ Public Policy Institute of California Statewide Survey, February 2006

important coast-related assets; enforcement of environmental laws; and regulation of the use of coastal resources or the activities that impact them.

OPC will coordinate the efforts of state agencies to protect ocean and coastal resources and maximize the efficiency with which limited public funds are expended to perform this critical task. As California grows, so grows the demand on public funding. Californians demand that their tax dollars be spent efficiently. OPC will work with all stakeholders to determine how best to fund both state agency operations and specific projects. OPC will recommend statutory changes needed to maximize the efficient use of funds for operations, and will develop clear criteria by which projects will be selected for funding. OPC's Science Advisory Team will make sure that all OPC decisions – including funding decisions – are based on sound science.

Mission

The mission of the California Ocean Protection Council is to ensure that California maintains healthy, resilient and productive ocean and coastal ecosystems for the benefit of current and future generations.

In carrying out this mission, OPC will rely upon the provisions of the California Ocean Protection Act, which requires that OPC:

- Coordinate activities of state agencies to improve the effectiveness of state efforts to protect ocean and coastal resources
- Establish policies to coordinate the collection and sharing of scientific data related to ocean and coastal resources
- Identify and recommend to the Legislature changes in state law and policy needed to achieve the goals of COPA
- Recommend to the Governor and the Legislature actions the state should take to encourage needed changes in federal law and policy

The phrase “ocean and coastal ecosystems” includes the area from the tops of coastal watersheds through the U.S. exclusive economic zone extending 200 miles offshore.

Guiding Principles of COPA

COPA includes guiding principles that California state agencies must follow and that OPC must promote. These guiding principles provide the foundation for all OPC initiatives described in this five-year strategic plan. These principles include:

- Recognizing the interconnectedness of the land and the sea, supporting sustainable uses of the coast and ensuring overall ecosystem health
- Improving the protection, conservation, restoration, and management of coastal and ocean ecosystems through enhanced scientific understanding, including monitoring and data gathering
- Recognizing the “precautionary principle”: where the possibility of serious harm exists, lack of scientific certainty should not preclude action to prevent the harm
- Identifying the most effective and efficient use of public funds by identifying gaps and new and innovative processes for achieving success

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- Making aesthetic, educational, and recreational uses of the coast and ocean a priority
- Involving the public in all aspects of OPC process, through public meetings, workshops, public conferences, and other symposia

Vision

OPC believes that identifying what success might look like is an important element of developing an effective strategy for meeting the goals of COPA. With this in mind, OPC has adapted the vision statement adopted by the U.S. Commission on Ocean Policy to reflect COPA, as follows:

In the future, the oceans and coasts are clean, safe, prospering, and sustainably managed. A high level of biodiversity and a wide range of critical natural habitats are maintained, that in turn support a thriving economy built on multiple beneficial uses, including fishing, energy development, recreation, and transportation. In this future, the coasts are attractive places to live, work and play, with clean water and beaches, easy public access, safe bustling harbors and ports, and special protection for sensitive habitats and threatened species. Beach closings, toxic algal blooms, proliferation of invasive species, and vanishing native species are rare. Better land-use planning and improved predictions of severe weather and other natural hazards save lives and money.

In this future, the management of our impacts on the ocean and coast has changed. Management boundaries correspond with ecosystem regions, and policies consider interactions among all ecosystem components. In the face of scientific uncertainty, managers balance competing considerations and proceed with caution. Ocean governance is effective, participatory and well coordinated among government agencies, the private sector and the public.

OPC envisions a time when the importance of reliable data and sound science is widely recognized and strong support is provided for physical, biological, social, and economic research, as well as ocean exploration. The state and nation invest in the necessary scientific tools and technologies. A widespread network of observing and monitoring stations provides a steady stream of useful data.

In this future, better education is a cornerstone of California's ocean and coastal policy. Scientific findings are translated into practical information and products for decision makers, vessel operators, educators, and the public. Improved knowledge and exploration of the ocean inspires and engages people of all ages, and citizens are motivated to help protect these important public resources.

This plan identifies measurable outputs and outcomes (included in this section as “performance measures”). OPC will regularly revisit these measurable outputs and outcomes as more information becomes available, and may revise them as necessary.

Outputs are the direct products of program activities, and may include reports, regulatory or legislative actions, conferences, databases, etc. Some of the actions described in this plan have specific outputs, while others do not. Outputs are an initial measure of effectiveness but are not ends in and of themselves. Rather, outputs are a means of producing outcomes.

Outcomes are the anticipated or actual effects of program activities and outputs. They constitute changes or improvements in target populations being served or the target systems being affected. An increased abundance of specific populations of wildlife is an outcome. Acres of wetlands preserved for our and future generations is another.

Section II. Priority Goals and Objectives

The intent of this plan is for OPC to identify clear goals for California and the short-term action items OPC plans to pursue to achieve those goals. While OPC will remain flexible in order to address important issues as they arise, this section describes the major goals that will guide OPC’s activities over the next five years. As OPC implements its goals and objectives, it will seek the advice of its State Agency Steering Committee and its Science Advisory Team.

As discussed in more detail in Section III, funding is one of the tools OPC will use to protect and restore California’s ocean and coastal resources. The demand for funding for ocean resource protection and conservation far exceeds available supply. Accordingly, one of OPC’s principal tasks identified in this section will be to inventory those needs and determine how best to spend both operational funds and programmatic funds. As COPA states, “Good governance and stewardship of ocean resources necessitate more efficient and effective use of public funds.” OPC plans to fulfill this mandate.

The five-member Council will meet throughout the year. These meetings provide a forum to receive public input and to shine light on important issues. These meetings also provide a forum for OPC to hold state agencies accountable. Most of the state ocean and coastal resource departments are housed within the Resources Agency, Cal/EPA and at the State Lands Commission. The two board members from the Legislature provide legislative oversight.

The first agency that OPC will hold accountable is itself. This strategic plan sets forth ambitious goals with clear deliverables and deadlines. OPC will hold itself to the same high standards that COPA demands of other governmental units. In the discussion below, OPC identifies goals for each of six themes, together with objectives and priority action items that will move the state toward achieving each goal. A complete list of candidate actions may be found in Appendix A of this plan.

The themes of the plan are:

- Governance
- Research and Monitoring
- Ocean and Coastal Water Quality
- Physical Processes and Habitat Structure
- Coastal and Ocean Ecosystems
- Education and Outreach

A. GOVERNANCE

One of the principal goals of OPC is to evaluate the way California protects and conserves the state's ocean and coastal ecosystem resources and to recommend legislative or administrative changes. COPA states that California "needs to coordinate governance and stewardship of the state's ocean, to identify priorities, bridge existing gaps, and ensure effective and scientifically sound approaches to protecting and conserving the most important ocean resources."

A goal of OPC is to enhance the capacity and performance of government programs to meet the goals of COPA.

Performance Measures:

- ⇒ By 2011, ecosystem-based management approaches guide government policies and programs that affect ocean and coastal ecosystems.

Objective 1: Funding. Maximize the effectiveness of funding spent to protect and conserve coastal resources.

Numerous state agencies receive public funds to protect ocean and coastal resources. These agencies regulate how these resources are used, regulate activities that impact these resources, and purchase coastal resources and place them in the public trust. Some agencies perform more than one of these functions. To date, no attempt has been made to identify all of the ocean-related functions performed by state agencies and the way in which public funds are expended to perform those functions. The California Ocean Protection Act directs OPC to undertake this task with the goal of maximizing the efficiency of public fund expenditures.

- **Action:** By February 2007, complete a comprehensive study of all state agency budgets for ocean and coastal protection activities. The study shall include: an assessment of existing special funds and whether those funds have been fully expended in existing operating budgets; an assessment of the range of existing and potential uses for any identified funds; and an assessment of whether there is a duplication of funding efforts.
- **Action:** By February 2007, complete a comprehensive study of all potential new funding sources for ocean and coastal protection.

- **Action:** By May 2007, work with all relevant state agencies to develop necessary regulations, legislation or other tools to improve the way ocean-related activities are funded.

Objective 2: Inter-agency Collaboration. Maximize the effectiveness of state agency efforts to protect and conserve ocean and coastal resources.

A patchwork of state and federal statutes and accompanying regulations govern the management of California's ocean and coastal resources. These laws were drafted over the last several decades, during which time no concerted effort was made to evaluate how well each agency discharged its duties. COPA directs OPC to "improve coordination and management of state efforts to protect and conserve the ocean" and to "identify changes in federal law and policy necessary to" better protect ocean resources.

- **Action:** By December 2006, inventory laws and identify gaps or overlapping jurisdictions affecting priority ocean and coastal issues.
- **Action:** By May 2007, work with all relevant state agencies to develop necessary regulations, legislation or other tools to improve ocean governance.

Objective 3: Enforcement. Improve the enforcement efforts of California's ocean and coastal protection laws.

California's environmental laws are enforced by a number of federal, state and local regulatory authorities, each of which may have its own enforcement unit. While it would be impractical and unwise to try to repose all enforcement authority in one agency, enforcement efforts can and should be better coordinated between agencies. Enforcement officials from one agency could be equipped with the skills and authority to enforce laws from agencies with similar responsibilities. The ocean environment, the public and the regulated community – business owners, municipalities and others – all will benefit from more efficient enforcement efforts.

Action: By December 2006, identify all ocean and coastal protection enforcement authorities, programs and budgets and convene a task force to provide recommendations to OPC on more efficient ways of conducting and coordinating enforcement.

Action: By May 2007, work with all relevant state agencies to develop necessary regulations, legislation or other tools to improve the enforcement of ocean and coastal protection laws.

Objective 4: Ecosystem-Based Management (EBM). Develop practical approaches to implementing ecosystem-based management and encourage implementation throughout the state.

Ecosystem-based management is an integrated approach to management that considers the entire ecosystem, including humans. The goal of ecosystem-based management is to maintain an ecosystem in a healthy, productive, and resilient condition so that it can provide the services humans want and need. Ecosystem-based management differs from

current approaches that usually focus on a single species, sector, activity or concern; it considers the cumulative impacts of different sectors.⁷ OPC will support the development of ecosystem-based management pilot programs in several regions throughout California. Lessons learned from the pilot programs will be evaluated and integrated into future ecosystem-based management programs.

- **Action:** By May 2007, work with all relevant state agencies to develop proposed regulations, legislation or other tools to integrate EBM principles into agency operations.
- **Action:** Support the development of ecosystem-based management pilot programs in several regions throughout California.

Objective 5: Federal Influence. Engage federal government support for California's priorities.

COPA requires that OPC “encourage cooperative management with federal agencies, to protect and conserve representative coastal and ocean habitats and the ecological processes that support those habitats.” California has called for implementation of the major recommendations of the U.S. Commission on Ocean Policy and the Pew Oceans Commission. OPC will continue to advocate for federal support for California initiatives, and for the implementation of key recommendations from both ocean commission reports.

- **Action:** Actively engage on the following issues by working with the President, Congress, Council on Environmental Quality, National and Western Governors' Associations, and Coastal States Organization to:
 - Maintain California's moratorium on offshore oil and gas leasing
 - Support California's non-point source pollution program
 - Call for the ratification of the Law of the Sea Treaty
 - Support California's ocean observing systems
 - Reauthorize a strong Coastal Zone Management Act
 - Support adequate funding for state and federal coastal programs

Objective 6: Regional Coordination. Pursue regional governance approaches to improve coordination of ocean management along the West Coast.

OPC will support increased regional coordination between California, Oregon and Washington, focusing on measures to improve ocean and coastal management.

- **Action:** By September 2006, adopt a tri-state agreement between the states of California, Oregon and Washington that focuses on initiatives by all three states to improve ocean and coastal management.

⁷ Compass. Scientific consensus statement on marine ecosystem based management. Released March 21, 2005. Available at <http://compassonline.org/?q=EBM>.

B. RESEARCH AND MONITORING

Solving complex ocean resource problems will require a better scientific understanding of the underlying functioning of ocean and coastal ecosystems. COPA requires OPC to “establish policies to coordinate the collection and sharing of scientific data related to coast and ocean resources between agencies.”

A goal of the OPC is to improve understanding of ocean and coastal ecosystems.

Performance Measures:

- ⇒ By 2011, the state has sufficient scientific understanding of biological, physical and socio-economic processes to implement ecosystem-based management statewide.
- ⇒ By 2011, consistent monitoring data is accessible to resource managers and the public.

Objective 1: Research. Improve scientific understanding of our ocean resources.

Science should be the foundation of ocean and coastal policy, but often it is not. Sometimes this is because research and monitoring activities are under-funded and other times it is because results are not communicated effectively to decision makers and the public. To begin to remedy these gaps in knowledge or application, the OPC adopted an Information, Research, and Outreach (IRO) Strategy⁸.

- **Action:** Implement the IRO recommendations and information and research priorities:
 - Make research part of the council's funding strategy
 - Make California's ocean observing system a national model
 - Seek federal support for California's research needs

Objective 2: Monitoring. Monitor and map the ocean environment to provide data about conditions and trends.

Increased and improved data acquisition, analysis and monitoring provide critical baselines for measuring future changes in ocean and coastal ecosystems. They also provide metrics to assess future success or failure of management measures.

- **Action:** Create state-sponsored ocean observing programs that will work with the federal Integrated Ocean Observing System (IOOS), the Regional Associations (RAs) and other entities to plan and build an integrated ocean observing system in California.
- **Action:** Pursue funding and partnerships to complete sea floor maps of all state waters. Information on the distribution of marine habitats and substrates is critical

⁸ Available at: http://resources.ca.gov/copc/InfoResOut_Strategy_final.pdf

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to effective management of fisheries, design of marine protected areas and other management efforts.

- **Action:** Support the establishment of a comprehensive monitoring program focused on Marine Protected Areas established under the Marine Life Protection Act and structured to be beneficial to other programs, including the Marine Life Management Act. Ensure that this monitoring effort is integrated with other state and federal monitoring programs.

C. OCEAN AND COASTAL WATER QUALITY

California's ocean and coastal ecosystems extend from the top of the watersheds, down rivers and into bays, estuaries, and lagoons, into the nearshore ocean, and ultimately to deep waters off the coast. The ocean is usually the end point of land-based pollutants that flow from coastal watersheds. Nearshore impairment of water quality can result from municipal sewage discharges, industrial waste discharges, dredge spoils, and agricultural and urban runoff. Impaired water quality undermines the ability of coastal ecosystems to support healthy fisheries, recreational opportunities and other beneficial uses.

A goal of OPC is significant improvement in ocean and coastal water quality.

Performance Measures:

- ⇒ By 2011, water quality is improved such that the number of beach closures is decreased by 75 percent from 1999.
- ⇒ By 2011, tonnage of debris along the coastline and in coastal waters is decreased by 50 percent from 1999.

Objective 1: Enforce Pollution Controls. Coordinate and support the personnel and programs needed to enforce existing water quality standards.

COPA states "terrestrial sources of ocean pollution in the state contribute to significant water quality degradation, causing deleterious impacts to public health and marine ecosystems, as well as coastal and recreational economics that are essential to the state's future." To reduce pollution, we must improve the way California enforces water quality laws.

- **Action:** By December 2006, evaluate the efforts of all agencies that enforce water quality laws.
- **Action:** By May 2007, work with all relevant agencies to develop regulations, legislation or other tools to improve and streamline enforcement efforts.
- **Action:** Support funding for additional enforcement personnel as warranted.

Objective 2: Innovation. Support the development of new technologies and approaches to reduce non-point source pollution.

Since the passage of the Clean Water Act in 1972, California and the rest of the country have made great strides in reducing point source pollution from industrial and other operations. However, regulators have had a more difficult time reducing pollutants from non-point sources such as storm water that flows from heavily paved urban environments, construction sites and agricultural operations. Innovative approaches are needed to continue to clean up our waterways.

- **Action:** Work with the Coastal Nonpoint Pollution Control Program to develop and implement innovative approaches to address non-point source pollution. Encourage innovative approaches to improve storm water management (such as increased permeable surfaces that allow storm water to percolate into the soil rather than flow to the ocean).

Objective 3: Once-through Cooling. Work to eliminate the harmful environmental impacts of once-through cooling at coastal power plants.⁹

In California, 21 coastal power plants use once-through cooling, a process whereby large volumes of seawater are drawn into the power plant to condense steam created during the generation process. As this occurs, small organisms such as plankton and larvae are also drawn into the cooling system and killed, and larger fish are pinned against the water intake screens. Warm water is also discharged back into the ocean, causing harm to the resident sea life.

- **Action:** Implement OPC's "Resolution Regarding the Use of Once-Through Cooling Technologies in Coastal Waters" as follows:
 - By December 2007, complete an engineering study of the existing coastal power plants to assess the possibility of implementing alternative technologies and operational changes
 - Urge the State Water Resources Control Board to implement the most protective controls to achieve a 90-95 percent reduction in impacts of entrainment and impingement
 - Establish an interagency coordinating committee to coordinate the activities of regulatory authorities that address once-through cooling
 - Investigate possible non-regulatory incentives that can accelerate desirable conversions away from once-through cooling

Objective 4: Water Quality Testing. Improve water quality testing programs and warning systems.

- **Action:** Develop and implement rapid indicators of pathogen contamination to provide for more timely notice of beach closures and openings.

⁹ OPC adopted a resolution entitled Resolution of the California Ocean Protection Council Regarding the Use of Once-Through Cooling Technologies in Coastal Waters, available at http://resources.ca.gov/copc/docs/060418_OTC_resolution_LH2_adopted_2006-4-20.pdf

D. PHYSICAL PROCESSES AND HABITAT STRUCTURE

California's ocean and coastal ecosystems reflect a diverse array of physical habitats, including coastal rivers and wetlands, sandy and rocky beaches, nearshore and offshore rocky reefs and plains, and submarine canyons. These habitats are affected by natural and human-caused factors, including sea-level rise, complex oceanographic processes, dredging, river impoundments and diversions, and certain types of fishing gear. Habitats must be maintained and restored to support fisheries, the diversity of California's coastal wildlife, and recreational and commercial opportunities.

A goal of OPC is to significantly improve the quantity and quality of ocean and coastal habitat in California.

Performance Measures:

- ⇒ By 2011, there will be measurable and significant improvements in the quantity and quality of the state's ocean and coastal habitat types.

Objective 1: Habitat Restoration. Restore and maintain valuable ocean and coastal habitats and resources.

For many decades, virtually all habitat types and natural systems within California's varied coastal and ocean ecosystems have been impacted by human activities. Coastal wetlands have been diked and filled for development or polluted by urban runoff. Coastal lagoons and nearshore waters have been choked with sediment and other pollutants, affecting eelgrass and kelp beds. Tidepools and rocky habitats have been damaged by intense recreational use. Alterations such as diversions, dams and channels have reduced the ability of some streams to support salmon and other species.

- **Action:** Fund priority habitat restoration projects, including those involving wetlands, eelgrass, kelp, and native oyster.
- **Action:** Implement actions to remove barriers to fish passage identified in the CalFish database, and work toward measuring and monitoring stream flows on key coastal streams.
- **Action:** Support efforts to restore riparian corridors such as the Ventura River, Klamath River and the San Francisco Bay-Delta.

Objective 2: Regional Sediment Management. Support the implementation of regional sediment management throughout California as a means of protecting, restoring and enhancing California's coastal sediment/beach resources.

Many shoreline problems caused by human modifications to the coast can be solved by implementing a new approach known as regional sediment management (RSM). The California Coastal Sediment Management Workgroup (CSMW), a partnership of state and federal agencies, is currently developing the California Coastal Sediment Master Plan.

This plan will provide a strategy for implementing regional sediment management solutions to the many shoreline problems along the California coast.

- **Action:** Work with the CSMW and local partners to complete and implement the California Coastal Sediment Master Plan.

Objective 3: Impacts of Climate Change. Support state efforts to detect the impacts of Climate Change and to develop strategies to respond to them.

Climate change will affect ocean and coastal habitats in a variety of ways, including alteration of river flows, increased sea level and consequent drowning of shallow water wetland habitats, increased storm surges, and damage to coastal property.

- **Action:** Work with the Climate Action Team to investigate the long-term impacts of sea-level rise and develop statewide adaptive management policies that will help agencies deal with these impacts.

E. COASTAL AND OCEAN ECOSYSTEMS

California's ocean and coastal ecosystems have supported human use for generations. Although management of activities that exploit or affect California's wildlife and plants has improved, unsustainable uses have reduced their capacity to provide goods and services that range from the enjoyment of viewing wild creatures to the production of food and industrial materials. California can benefit from several laws that provide tools that support human use of wild plants and wildlife consistent with long-term economic and ecological values, including the Marine Life Management Act (MLMA) and the Marine Life Protection Act (MLPA). Meeting the challenges of the future will require understanding both the potential and the limits of our ocean resources.

A goal of OPC is to significantly increase healthy ocean and coastal wildlife populations and communities in California.

Performance Measures:

- ⇒ By 2011, California will have significantly reduced the number of over-exploited species.

Objective 1: Marine Life Protection Act. Help complete and implement a statewide network of Marine Protected Areas (MPAs).

Marine Protected Areas are areas of the ocean where some types of human activity are restricted. MPAs protect habitat, maintain and restore biological diversity and commercially valuable species, provide recreational opportunities, and allow for scientific research. The MLPA Initiative, launched by the Schwarzenegger Administration in 2004, has as its goal completion by 2011 of the statewide network of MPAs mandated by the MLPA.

- **Action:** Identify and fill critical needs in executing the MLPA. OPC will support the Department of Fish and Game and Fish and Game Commission in implementation

of the MLPA beyond the central region to other areas in the state and will help secure funding that the Department of Fish and Game will need to manage a statewide network of MPAs.

- **Action:** Make resources available to design and implement a comprehensive MPA monitoring program that can be implemented statewide, and that will measure changes in these ecosystems and inform future management decisions.

Objective 2: Marine Life Management Act. Help establish ecologically and economically sustainable fisheries.

The Marine Life Management Act (MLMA) mandates several significant changes in the way California's marine fisheries are managed and regulated. Its primary goals are to ensure the conservation, restoration and sustainable use of California's living marine resources. The MLMA requires that fishery management plans (FMPs) form the primary basis for managing the state's marine fisheries. OPC will support DFG in the development, implementation and enforcement of essential FMPs.

- **Action:** Support implementation of FMPs adopted under the MLMA and the development of new FMPs for priority fisheries.
- **Action:** Make resources available to support DFG's work on the MLMA.

Objective 3: Invasive Species. Significantly increase the capacity of government agencies and the private sector to reduce and respond to invasive species.

Invasive species of plants and animals can swiftly undermine efforts to maintain the diversity and productivity of ocean and coastal ecosystems. The invasive alga *Caulerpa taxifolia* made a virtual desert out of much of the Mediterranean Sea and threatened to do the same in Southern California lagoons before it was stopped by concerted federal, state and local governmental efforts and those of private organizations. In San Francisco Bay a host of foreign organisms have displaced native flora and fauna. Native cordgrass *Spartina foliosa* is being replaced by an eastern invader, *Spartina alterniflora*, and has begun to destroy much of the region's mudflats, a critical foraging area for many bird species. This invasion has been stopped by a state-led consortium, but many battles remain to preserve native species and habitats.

- **Action:** By November 2006, complete the California Aquatic Invasive Species (AIS) Management Plan and the state rapid response plan. OPC will support the full implementation of these plans and the California Noxious and Invasive Weed Action Plan.

Objective 4: Market-Based Fisheries. Support market-based fishery management approaches.

Commercial fishing is an important part of California's history, economy and culture; however, overall commercial fishing in California has suffered a severe decline in the last 30 years. This decline has made it difficult for many fishermen to make a living and

discourages new investment and new business initiatives. OPC will support innovative approaches to fisheries management by working cooperatively with fishermen and their communities and applying market-based approaches. OPC will examine other strategies such as promoting limited entry, quota-based fishery management systems, or vessel buy-backs.

- **Action:** Develop a California Fisheries Fund or similar strategy that will facilitate a transition to fishing levels that match the amount of fish caught to the amount of fish produced, and develop new fishing techniques to reduce bycatch.

Objective 5: Encourage Sustainable Economic Activity. Encourage emerging coastal and ocean economic activities that will provide new economic opportunities for the state, can be conducted in a sustainable manner, and are consistent with the goals and objectives of the California Ocean Protection Act.

According to a 2005 National Ocean Economics Program report, California's ocean economy contributed \$43 billion to the California state economy in 2002 through a variety of activities including coastal tourism, port operations and other activities. California's 1,100-mile coast hosts dozens of large and small harbors that have come under increasing pressure as past patterns of resource exploitation have negatively impacted local economies. Shifting fisheries that once depended on high-volume, low-value exploitation to low-volume, high-value fisheries, for instance, will require new kinds of port and harbor infrastructure. OPC will encourage new and emerging economic activities or technologies that can boost California's ocean economy in a sustainable manner.

- **Action:** Encourage and support new or innovative economic activities that can be conducted in a sustainable manner along or offshore the California coast.
- **Action:** Preserve working harbors through investments in infrastructure such as small-scale fish processing facilities.

F. EDUCATION AND OUTREACH

A strong link exists between the public's understanding of the natural environment and its willingness to protect and preserve natural resources. Statewide, a lack of public knowledge exists about the ocean and its problems, but recent surveys indicate that Californians support efforts to protect the oceans and are interested in learning more about them. Ocean stewardship could be dramatically improved through state-wide outreach programs.

A goal of OPC is to promote ocean and coastal awareness and stewardship.

Performance Measures:

- ⇒ By 2011, as measured by polling data, a majority of Californians: are aware of their individual impact on the coast and ocean; and practice conservation principles in their home, work and recreational activities.

Objective 1: Public Awareness. Increase public awareness of ocean and coastal issues and encourage individual stewardship.

OPC made public outreach a priority in adopting the *California Ocean and Coastal Information, Research, and Outreach Strategy (IRO Strategy)*. This strategy sets forth actions for the state to increase public awareness and stewardship of the ocean.

- **Action:** Implement the recommendations and priorities on outreach in the IRO Strategy, including:
 - Improve access to and coordination of ocean and coastal information through a comprehensive ocean and coastal web portal
 - Incorporate ocean and coastal science into K-12 and adult education programs by supporting Cal/EPA's Education and the Environment Initiative
 - Build a public media campaign with the National Marine Sanctuary Program and the Ocean Communicators Alliance

III. Tools to Implement COPA

The Ocean Protection Council will implement the California Ocean Protection Act by using the tools outlined in this section. These tools will be used by OPC and staff to achieve the major goals, priorities, and actions identified in Section II.

A. FUNDING: ENSURING OUR GOALS CAN BE ATTAINED

As discussed above, California's ocean and coastal resources are a valuable asset, and California must continue to make sound investments to protect that asset. A 2005 National Ocean Economics Program study valued California's "ocean economy" at \$43 billion. This sector of the economy directly supports over 400,000 jobs, and indirectly almost 700,000 jobs.¹⁰ The ocean also provides innumerable other benefits to Californians.

The California Ocean Protection Act explicitly recognizes this value: "California's coastal and ocean resources are critical to the state's environmental and economic security, and integral to the state's high quality of life and culture." California's population has more than doubled in just the last four decades, from under 16 million in 1960 to more than 37 million today. With an increase in population comes an increase in pressure on our ocean resources.

COPA requires "a more efficient and effective use of public funds" to protect California's valuable ocean resources. OPC's role will be to make sure that investments are wise. OPC will complete two studies, one that examines how state government agencies currently spend public funds on ocean and coastal protection, and one that examines all potential new sources of funding for this purpose.

Appendix A provides a list of candidate projects that OPC may support or help fund. OPC's current project funding guidelines can be found at the following web address: http://resources.ca.gov/copc/0509COPC_Revised_Interim_Guidelines.pdf. OPC will work with state agency and public stakeholders to further refine these guidelines.

B. COORDINATION, COLLABORATION AND INTEGRATION: MAKING GOVERNMENT WORK BETTER

An important function of OPC is to coordinate the activities of a number of state agencies with ocean protection responsibilities and to make sure that those decisions are made in a transparent, public manner. OPC will also work to make sure that the best science available is used to make those decisions.

¹⁰ These figures represent a concerted effort to determine the economic value of those goods and services that are traded in the market. They do not represent the value of a whole range of other benefits. For example, as discussed above, wetlands filter pollutants from streams before they enter the ocean. They also act like a sponge and absorb storm surges, protecting ocean-front property from flooding. And they act as nurseries for fish and other marine life. Attempts have been made to assign an economic value to these services, but no consensus has been reached in how to do so.

Create a State Agency Steering Committee. OPC will establish a State Agency Steering Committee composed of senior representatives of state departments, boards and commissions that have ocean and coastal protection responsibilities. OPC's Executive Policy Officer will chair the Steering Committee, coordinate its activities with the Science Advisory Team, and report to OPC. The Steering Committee will meet with the Science Advisory Team to vet its priorities and to generate a list of questions that can serve as the basis for scientific investigation.

The Steering Committee will:

- Identify top priorities for each fiscal year
- Identify strategies and projects within and across agencies to address these top priorities
- Assess the capabilities of agencies to carry out their ocean and coastal protection responsibilities
- Identify necessary funding for priority actions—either through redeploying existing funds, developing cross-cutting budgets, or identifying new funding
- Recommend any necessary legislative action or regulatory changes to implement priority actions and strategies

Create a Science Advisory Team. To ensure that the best available science is applied to OPC policy decisions, a Science Advisory Team will be established, composed of leading scientists from all major ocean and coastal scientific disciplines including the social and human sciences. The OPC Science Advisor will chair the Science Advisory Team, coordinate with the State Agency Steering Committee and report to OPC.

The Science Advisory Team will:

- Work with OPC staff to ensure that all staff recommendations and projects proposed to OPC are based on the best available science
- Convene technical working groups and scientific forums to address critical management problems

Encourage Stakeholder Participation. To ensure that the ocean and coastal community is involved in OPC activities, OPC will encourage stakeholder participation. OPC will:

- Continue to encourage public involvement at OPC meetings through open public comment and Web casting of meetings
- Convene public workshops before OPC meetings to encourage informal dialogue about OPC actions
- Host the *California and the World Ocean Conference 2006 (CWO '06)*, September 17-20 in Long Beach, California

Appendix A. OPC Potential Roles for Implementing Actions

The OPC will assume different roles in implementing the priorities identified in Section II and in each of the specific actions that are detailed in this Appendix. The various OPC and partner agency roles are defined below and then listed for each of the actions.

Coordination, Collaboration, and Integration

Lead: The OPC will take a lead role in the development and operation of standing advisory committees or processes through the State Agency Steering Committee. The OPC may take the lead in developing other committees or processes to bring about sharing of information, coordinated and integrated action, law and policy development, and public participation in decision-making.

Support: The OPC will participate in committees or processes. The OPC may appoint one or more of its members to, or its staff will participate in, committees, workgroups, or task forces created by other entities. This will bring the OPC's broad perspective, network of organizations, and the possibility of OPC funding, to these ventures.

Policy Guidance

Lead: The OPC will assist agencies and others by developing policy guidance on key issues. The OPC may engage the Steering Committee and Science Advisory Team, as well as outside experts and the public, in identifying needs for policy guidance and in developing guidance.

Support: The OPC will provide support to the development of policy by agencies and the Legislature by providing the results of policy and other research that it sponsors or conducts. The OPC may make recommendations to agencies and the Legislature regarding desirable policy changes.

Funding

Direct: The OPC will make direct expenditures. The OPC has received funds for a wide range of purposes through appropriations from Resources Agency, Coastal Conservancy, and the State Water Resources Control Board. Other departments are considering making funds available for OPC purposes. To the extent available, the OPC will provide such funds to public agencies, NGOs, and other parties, through grants, contracts, and interagency agreements.

Indirect: The OPC will provide support for other parties to receive funds. Using this and other plans as a guide, the OPC will help develop and support budget proposals for other State departments and will assist in negotiating such proposals through the Resources Agency, CalEPA, the Department of Finance, and the Legislature. It will investigate new funding sources, develop cross-cutting budgets, and promote efficient and effective use of existing funds. It may propose reallocation of existing funds administratively or through changes in law or regulation. It will work to increase federal contributions and funds from foundations.

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

A. Governance						
<i>A goal of OPC is to enhance the capacity and performance of government programs to meet the goals of COPA.</i>						
Objective 1: Funding. Maximize the effectiveness of funding spent to protect and conserve coastal resources.						
1a	Complete a comprehensive study of all state agency budgets for ocean protection activities.	Lead	Lead	Direct	OPC	All relevant state agencies
1b	Complete a comprehensive study of all potential new funding sources for ocean and coastal protection.	Lead	Lead	Direct	OPC	RA, CCC, BCDC
1c	Work with all relevant state agencies to develop necessary legislation, regulations or other tools to improve the way ocean-related activities are funded.	Lead	Lead	Direct	OPC	All relevant state agencies, RI
Objective 2: Inter-agency Collaboration. Maximize the effectiveness of state agency efforts to protect and conserve ocean resources.						
2a	Inventory laws and identify gaps or overlapping jurisdictions affecting priority ocean issues.	Lead	Lead	Direct	OPC	All relevant state agencies, RI
2b	Work with all relevant state agencies to develop necessary legislation, regulations or other tools to improve ocean governance. Identify and promote administrative, regulatory, and legislative measures that will enhance the effectiveness of state coastal and ocean programs in addressing priority issues by reducing gaps and conflicts in policies and programs.	Lead	Lead	Direct	OPC	All relevant state agencies, RI
Objective 3: Enforcement. Improve the enforcement efforts of California's ocean protection laws.						
3a	Identify all ocean protection enforcement efforts and convene a task force to provide recommendations to OPC on more efficient ways of conducting and coordinating enforcement.	Lead	Lead	Support	OPC	All relevant state agencies

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

3b	Work with all relevant state agencies to develop necessary legislation, regulations or other tools to improve the enforcement of ocean protection laws.	Lead	Lead	Direct	OPC	All relevant state agencies
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Objective 4: Ecosystem-Based Management (EBM). Develop practical approaches to implementing ecosystem-based management and encourage their implementation throughout the state.

4a	Work with all relevant state agencies to develop proposed legislation, regulation or other tools to integrate EBM principles into agency operations.	Lead	Lead	Direct; Support	OPC	All relevant state agencies, RI, NGO
4b	Create, test, and implement three or more pilot EBM projects or programs (such as the Morro Bay EBM project) to help manage entire ecosystems in a comprehensive, adaptive, and holistic manner.	Lead; Support	Lead; Support	Direct; Support	SCC	LG, DFG

Objective 5: Federal Influence. Engage federal government support for California's priorities.

5a	Actively engage on the following issues by working with the President, Congress, Council on Environmental Quality, National and Western Governors' Associations, and Coastal States Organization to:	Lead	Lead	Direct	OPC	All relevant state agencies, NOAA
	Maintain California's moratorium on offshore oil and gas leasing.					
	Support California's non-point source pollution program.					
	Call for the ratification of the Law of the Sea Treaty.					
	Support California's ocean observing systems					
	Re-authorize a strong Coastal Zone Management Act.					
	Support adequate funding for state and federal coastal programs					

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

Objective 6: Regional Coordination. Pursue regional governance approaches to improve coordination of ocean management along the West Coast.						
6a	Adopt a tri-state agreement by September 2006 between the states of California, Oregon and Washington that focuses on initiatives by all three states to improve ocean and coastal management.	Support	Support		OPC	OPC
Objective 7: Performance Measures. Build the foundation for identifying outputs and outcomes for objectives and actions supported by the OPC.						
7a	Identify outputs and outcomes for at least one objective under each goal and evaluate activities in producing that outcome over the next five years.	Lead	Lead	Direct	OPC	All
B. Research and Monitoring						
<i>A goal of the OPC is to improve understanding of ocean and coastal ecosystems.</i>						
Objective 1: Research. Improve scientific understanding of our ocean resources and the processes and uses that affect them.						
1a	Implement the IRO recommendations and information and research priorities:	Lead	Lead	Direct	OPC	All
	Make research part of the council's funding strategy.					
	Make California's ocean observing system a national model.					
	Seek federal support for California's research needs.					
1b	Work with the California Sea Grant Programs to review and award grants that meet the OPC guidelines and priorities. Support or collaborate with the research activities by agencies, universities, and programs that seek to provide a better scientific understanding of impacts to ocean and coastal ecosystems.	Support	Support	Support	Seagrant	UC, CSU, RI

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

Objective 2: Monitoring. Monitor and map the ocean environment to provide data about conditions and trends.						
2a	Create state-sponsored ocean observing programs that will work with the federal Integrated Ocean Observing System (IOOS), the Regional Associations (RAs) and other entities to plan and build an integrated ocean observing system in California.	Support	Lead; Support	Direct; Support	SCC, UC, CSU, NOAA	BCDC, CCC, DFG, DPR, JPAs, NPS, NGO, NMS, NOAA, NOS, RA, RI, RWQCB, SWRCB, UC, CSU, USGS, USFWS, USCG
2b	Complete a statewide management information needs assessment that will guide the development of future ocean observing systems. Develop and implement a comprehensive state or regional approach for acquiring, managing, and disseminating observing data in a way that is responsive to management priorities and numerous stakeholders. Work to integrate data collection techniques between the California RAs, and among the Californian systems, the Pacific regional systems, and the national IOOS. Complete installation of the Coastal Ocean Currents Monitoring Program (COCMP) and ensure it is fully maintained and coordinated with other state and regional observing system components.	Support	Lead; Support	Direct	SCC, UC, CSU, NOAA	BCDC, CCC, DFG, DPR, JPAs, NPS, NGO, NMS, NOAA, NOS, RA, RI, RWQCB, SWRCB, UC, CSU, USGS, USFWS, USCG

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

2c	Support and expand existing ocean observing and monitoring programs, data management capabilities, and continued operations and necessary improvements. Support monitoring programs such as Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO), Cooperative Research and Assessment of Nearshore Ecosystems (CRANE), California Cooperative Oceanic Fisheries Investigation (CalCOFI), the Water Boards' Surface Water Ambient Monitoring Program (SWAMP), the Statewide Wetlands Monitoring Program, and other regional, long-term data collection efforts.	Support	Lead; Support	Direct; Support	SCC, UC, CSU, DFG, SWRCB, NMFS, NOAA	CCC, BCDC, LG, JPAs, NGO, DPR, NPS, RA, USFWS
2d	Pursue funding and partnerships to complete sea floor maps of all state waters. Mapping includes data acquisition, interpretation, and creation of habitat maps. Work with the federal government to map essential areas of federal waters. Implement the recommendations from the December 2006 Statewide Marine Mapping Planning Workshop and Report, and require all future mapping projects to use standards identified in the Workshop Report.	Lead; Support	Lead; Support	Direct; Support	OPC	SCC, CSU, NGO, USGS, UC, DFG, RI
2e	Develop and maintain state and federal partnerships to leverage investment in mapping projects.	Lead; Support	Lead; Support	Direct; Support	OPC	NOAA, USGS
2f	Develop and implement a system for data management and a standardized approach to the format and distribution of mapping products.	Lead; Support	Lead; Support	Direct; Support	OPC, DOC/CGS	NOAA, USGS
2g	Support the establishment of a comprehensive monitoring program focused on MPAs established under the MLPA and structured to be beneficial to other programs, including the MLMA. Insure that this monitoring effort is integrated with other state and federal monitoring programs.	Support	Support	Direct; Support	DFG, OPC	SCC, NOAA, NGO,

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

2h	Develop a set of statewide standardized indicators for biological, physical, social, and economic disciplines.	Support	Lead; Support	Direct; Support	DFG, CalEPA, SWRCB, JPAs, LA	SCC, UC, CSU, NGO, NMS, RWCQB
2i	Establish a mechanism or organization to provide data synthesis services with the goal of assembling scientific results from state and national efforts and producing products for diverse scientific, public, and policy audiences.	Support	Support	Direct; Support	SCC, UC, CSU, NOAA	NGO, RA, RI
C. Ocean and Coastal Water Quality						
<i>A goal of OPC is significant improvement in ocean and coastal water quality.</i>						
Objective 1: Enforce Pollution Controls. Coordinate and support the personnel and programs needed to enforce existing water quality standards.						
1a	Evaluate the efforts of all agencies that enforce water quality laws.	Lead	Lead	Direct; Support	OPC	CCC, DFG, CalEPA, RWQCB, SWRCB
1b	Work with all relevant agencies to develop legislation, regulations or other tools to improve and streamline enforcement efforts.	Lead	Lead	Direct; Support	OPC	CCC, DFG, CalEPA, RWQCB, SWRCB
1c	Support funding for additional enforcement personnel as warranted.	Lead	Lead	Direct; Support	OPC	CCC, DFG, CalEPA, RWQCB, SWRCB
1d	Establish Special Protections to eliminate or limit waste discharges into Areas of Special Biological Significance (ASBS). These Special Protections will require, by 2011: 1) the elimination of dry weather flows from municipal storm drains into ASBS, and 2) that pollutants in municipal storm runoff will be minimized in order to protect beneficial uses in ASBS.	Support	Support	Support	SWRCB	CCC

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

1e	Support local governments in addressing land use planning issues affecting ocean and coastal water quality, including updating local coastal programs.	Support	Support	Support	CCC, BCDC	SWRCB, RWQCB, SCC, RC, Cons Corps
1f	Prepare policy responses and address conflicts between state and federal authorities as necessary relating to off-shore development proposals impacting ocean and coastal water quality. Review proposals for co-locating other offshore industries with existing offshore oil platforms and for decommissioning aging platforms to determine potential impacts to ocean and coastal resources.	Lead; Support	Lead; Support	Direct; Support	OPC	All relevant state agencies
Objective 2: Innovation. Support the development of new technologies and approaches to reduce non-point source pollution.						
2a	Work with the State and Regional Water Boards, the Coastal Commission and the Bay Conservation and Development Commission to develop and implement innovative approaches to address non-point source pollution. Encourage innovative approaches to improve storm water management (such as increased permeable surfaces that allow storm water to percolate into the soil rather than flow to the ocean). Promote source control through improved public information and low impact development. Support the development of consistent statewide procedures for monitoring emerging pollutants, such as endocrine disrupters and PBDE.	Support	Support	Direct; Support	WRCB, RWQCB	CCC, SCC, BCDC, RC

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

2b	Reduce sediment, nutrient, and chemical laden runoff due to forestry, viticulture, and agricultural operations through implementation of the State Water Board's nonpoint source pollution program, and acquisition of property interests, voluntary certification programs, and grant programs to install source controls.	Support	Support	Direct; Support	SWRCB, SCC, WCB	SCWRP, SFBJV, RWQCB, RC
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Objective 3: Once-through Cooling. Work to eliminate the harmful environmental impacts of once-through cooling at coastal power plants.

3a	Implement OPC's "Resolution Regarding the Use of Once-Through Cooling Technologies in Coastal Waters" as follows:	Lead	Lead	Direct	OPC	CEC, CCC, PUC, SWRCB
	By December 2007, complete an engineering study of the existing coastal power plants to assess the possibility of implementing alternative technologies and operational changes	Lead	Lead	Direct	OPC	CEC, CCC, PUC, SWRCB
	Urge the State Water Resources Control Board to implement the most protective controls to achieve a 90-95 percent reduction in impacts of entrainment and impingement	Lead	Lead	Direct	OPC	CEC, CCC, PUC, SWRCB
	Establish an interagency coordinating committee to coordinate the activities of regulatory authorities that address once-through cooling	Lead	Lead	Direct	OPC	CEC, CCC, PUC, SWRCB
	Investigate possible non-regulatory incentives that can accelerate desirable conversions away from once-through cooling	Lead	Lead	Direct	OPC	CEC, CCC, PUC, SWRCB

Objective 4: Water Quality Testing. Improve water quality testing programs and warning systems.

4a	Develop and implement rapid indicators of pathogen contamination to provide for more timely notice of beach closures and openings.	Support	Support	Direct; Support	SWRCB	RWQCB, SCC, RC
4b	Investigate options for detection and treatment of pharmaceuticals, pathogens, and endocrine disruptors in wastewater and runoff.	Support	Support	Direct; Support	SWRCB	RWQCB, SCC, RC

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

4c	Promote improved monitoring and forecasting of harmful algal blooms to provide advance warning of possible beach closures.	Support	Support	Direct; Support	SWRCB	RWQCB, SCC, RC
4d	Investigate solutions to methyl-mercury contamination in the food chain and improve public education on the potential health risks.	Support	Support	Direct; Support	SWRCB	RWQCB, SCC, RC, Cons Corps
Objective 5: Marine Debris. Reduce ocean and coastal debris and its impacts to ocean ecosystems.						
5a	Support the implementation of the 2006 California Marine Debris Action Plan, including the creation of a state Interagency Task Force on Litter and Marine Debris.	Support	Support	Direct; Support	CCC, DBW	SCC, SLC, SWRCB, RWQCB, BCDC
5b	Promote and expand the Adopt-a-Beach program and Coastal Cleanup Day.	Support	Support	Direct; Support	CCC	SWRCB, DBW, RWQCB
5c	Support and expand the California Derelict Fishing Gear Program, in cooperation with the fishing community, to reduce impacts from lost commercial and recreational fishing gear.	Lead	Lead	Direct	SCC	DFG, Cons Corps
Objective 6: Vessel Pollution. Reduce or eliminate point source pollution from vessels.						
6a	Work with the U.S. EPA and NOAA to prohibit sewage, sewage sludge, graywater, and all other waste disposal from ocean-going ships and large passenger vessels (greater than 300 gross registered tons).	Support	Support	Support	OPC	USEPA, NOAA, SCC, SWRCB, CCC
6b	Promote the development of alternatives to anti-fouling chemicals (e.g., in hull paints) used on vessels that would continue to be effective growth-inhibitors of vessel fouling organisms.	Support	Support	Direct	SWRCB	CCC, BCDC, SCC
6c	Support clean marinas and improve water quality at harbors.	Support	Support	Direct; Support	DBW	RWQCB, SCC, SWRCB, CCC, BCDC

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

6d	Assist ports by developing innovative and/or beneficial disposal of dredge materials, and support efforts to improve water and air quality.	Support	Support	Direct; Support	LG, LA	NGO, SCC, CCC, BCDC, RWQCB, SWRCB, USEPA, USFWS, ACOE
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D. Physical Processes and Habitat Structure

A goal of OPC is to significantly improve the quantity and quality of ocean and coastal habitat in California.

Objective 1: Habitat Restoration. Restore and maintain valuable ocean and coastal habitats and resources.

1a	Fund priority restoration projects, including eelgrass, kelp, native oyster, or other subtidal habitats. Implement ten subtidal restoration projects including eelgrass, kelp, native oyster or other subtidal habitats.	Support	Support	Direct	SCC	SCC, NGO, Cons corps
1b	Implement actions to remove barriers to fish passage identified in the CalFish database, and work toward measuring and monitoring stream flows on key coastal streams.	Support	Support	Direct	SCC	DFG, PFMC
1c	Support efforts to restore riparian corridors such as the Ventura River, Klamath River and San Francisco Bay, focusing on restoration of habitat connectivity and quality within coastal watersheds. Complete planning for the restoration of rivers and stream corridors to promote the recovery of native salmonid species. Support large-scale dam removal and associated watershed restoration projects that require additional funds to complete, such as Matilija Dam, Rindge Dam, and San Clemente Dam. Examine the removal of dams on the Klamath River to determine future state roles, and consider restoring the Klamath River as a keystone project.	Support	Support	Direct; Support	DFG, SCC, WCB, SWRCB, ACOE, LG	USFWS, NOAA, BR, RC, USGS, DWR, JPA, SCWRP, SLC, Cons Corps, RWQCB

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

1d	Complete planning and begin implementation for restoration of at least 30,000 acres of coastal or San Francisco Bay wetlands. Complete planning and begin ecosystem-scale wetlands restoration projects (e.g., South Bay Salt Ponds), including adaptive management and monitoring.	Support	Support	Direct; Support	SCC	ACOE, BCDC, Cons Corps, DFG, WCB, LG, RI, RWQCB, SCC, SFBJV, USFWS
1e	Test different management regimes for protecting coastal strand ecosystems, including tide pools and rocky intertidal habitat, and establish best management practices based on these investigations.	Support	Support	Direct	DPR	SCC, DFG, RI
1f	Complete the San Francisco Bay Subtidal Habitat Goals Project by June 2008 and support full implementation of its recommendations. Initiate similar restoration planning projects in key bays and estuaries at representative locations along the coast, such as Humboldt Bay or Tomales Bay. Integrate the San Francisco Bay Subtidal, Baylands, and Uplands Habitat Goals projects to develop a comprehensive protection and restoration plan for the Bay Area.	Support	Support	Direct; Support	DFG, SCC	SCC, WCB, Cons Corps, DFG, LG, ACOE, BR, BCDC, CCC, RC, RI, RWQCB, USFWS
1g	Support the work of the Southern California Wetlands Recovery Project, San Francisco Bay Joint Venture, Pacific Coast Joint Venture, and other regional restoration coordination efforts.	Support	Support	Direct; Support	SCWRP, SFBJV, PCJV	SCC, WCB, Cons Corps, DFG, LG, ACOE, BR, BCDC, CCC, RC, RI, RWQCB, USFWS
1h	Develop rapid assessments or inventory procedures for watersheds to facilitate prioritization of watershed projects where a comprehensive assessment is not feasible. Investigate and recommend future policies to protect streams and watersheds.	Support	Support	Support	SWRCB	CCC, Cons Corps, SCC, RWQCB, SCWRP, SFBJV

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

1i	Install and establish a system for long-term maintenance of stream gauges statewide. Determine flow rates necessary to protect water quality in coastal lagoons and estuaries consistent with the water pollution control policies of the Regional Water Boards.	Support	Support	Direct; Support	SWRCB, DWR	SCC, RWQCB, LG
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Objective 2: Regional Sediment Management. Support the implementation of Regional Sediment Management throughout California as a means of protecting, restoring and enhancing California's coastal sediment and beach resources.

2a	Work with the CSMW and local partners to complete and implement the California Coastal Sediment Master Plan in a manner that does not degrade ocean and coastal habitat.	Support	Support	Direct	RA, ACOE	DBW, SCC, USGS, CCC, CGS, DFG, SLC, LG, DPR
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Objective 3: Impacts of Climate Change. Support state efforts to detect the impacts of Climate Change and to develop strategies to respond to them.

4a	Investigate the long-term impacts of sea-level rise and develop statewide adaptive management policies that will help agencies deal with these impacts.	Lead	Lead	Direct	OPC	NOAA, CGS, USGS, RI, CCC, DFG, BCDC, LG, NOAA
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E. Ocean and Coastal Ecosystems

A goal of OPC is to significantly increase healthy ocean and coastal wildlife populations and communities in California.

Objective 1: Marine Life Protection Act. Help complete and implement a statewide network of Marine Protected Areas (MPAs).

1a	Identify and fill critical needs in executing the MLPA Initiative. Support DFG and FGC in implementation of the MLPA beyond the central region to other areas in the state and will help secure funding that DFG will need to manage a statewide network of MPAs.	Support	Support	Direct	DFG	NGO, NMS, LG
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Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

1b	Make resources available to design and implement a comprehensive MPA monitoring program that can be implemented statewide, and that will measure changes in these ecosystems and inform future management decisions.	Support	Support	Direct; Support	DFG	NGO, RI, NOAA, Cons Corps
Objective 2: Marine Life Management Act. Help establish ecologically and economically sustainable fisheries.						
2a	Support implementation of FMPs adopted under the MLMA and the development of new FMPs for priority fisheries. Complete priority stock assessments and FMPs, and enforcement of regulations. Support cooperative research and facilitate data sharing among fishers, academics, and agency personnel to enhance DFG stock assessments and other regulatory decisions.	Support	Support	Direct; Support	DFG	NOAA, RI, NGO
2b	Make resources available to support DFG's work on the MLMA.	Support	Support	Support	DFG	NOAA, RI, NGO
2c	Investigate regulatory and legislative changes that may be needed to restructure DFG and other fee systems.	Lead	Lead	Direct	OPC, DFG	RA
2d	Install new technologies for permitting, such as electronic licensing for commercial and recreational fishers, and investigate and implement new technologies for enforcing regulations.	Lead; Support	Lead; Support	Direct; Support	DFG	RA, RI, NOAA
Objective 3: Invasive Species. Significantly increase the capacity of government agencies and the private sector to reduce and respond to invasive species.						
3a	Complete the California Aquatic Invasive Species (AIS) Management Plan and the state rapid response plan. Support the full implementation of those plans and the California Noxious and Invasive Weed Action Plan.	Support	Support	Direct	DFG	SCC, LG, Cons Corps, SCWRP, SFBJV, DFA, RWQCB, SWRCB, RC, RI, SLC, USCG, USEPA, USFWS

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

3b	Improve regulatory coordination and enforcement to prevent or quickly respond to invasive species introductions. Establish a rapid response emergency fund for coastal invasive species in areas determined to be a high priority for response.	Lead; Support	Lead; Support	Direct; Support	DFG, DFA	SCC, RWQCB, SWRCB, SLC, USEPA, USFWS, NOAA, Cons Corps, CCC, RC, BCDC
3c	Improve research and data collection on invasive species and coordinate information dissemination on coastal invasions.	Support	Support	Direct; Support	DFG, SCC	CCC, BCDC, RI, NGO, SCWRP, SFBJV
Objective 4: Market-Based Fisheries. Support market-based fishery management approaches.						
4a	Develop a California Fisheries Fund or similar strategy that will facilitate a transition to fishing levels that match the amount of fish caught to the amount of fish produced, and develop new fishing techniques to reduce bycatch.	Lead	Lead	Direct; Support	NGO	DFG, RI, SCC
4b	Investigate the feasibility of various sustainable fishery management approaches, such as vessel buybacks, different quota systems, and limited entry programs. Encourage the development of sustainable fishing gear.	Lead	Lead	Direct; Support	NGO, DFG	RI, SCC
4c	Investigate the potential for consumer-oriented market approaches, such as a California sustainable seafood certification program or direct-to-consumer sustainable seafood markets.	Lead	Lead	Direct; Support	NGO, DFG	RI, SCC
Objective 5: Encourage Sustainable Economic Activity. Encourage emerging coastal and ocean economic activities that will provide new economic opportunities for the state, can be conducted in a sustainable manner, and are consistent with the goals and objectives of the California Ocean Protection Act.						
5a	Encourage and support new or innovative economic activities that can be conducted in a sustainable manner along or offshore the California coast.	Lead	Lead	Direct; Support	SCC, NGO	BCDC, CCC, DFG, LG, LA, NGO, RI

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

5b	Preserve working harbors through investments in infrastructure such as small-scale fish processing facilities.	Support	Lead	Direct; Support	DBW, LG, LA, SCC, NGO	CCC, BCDC, LG
5c	Inventory existing commercial leases of state-owned submerged tidelands and assess the adequacy of standards, practices, and resource protection for these areas. Recommend changes as necessary to current laws and regulations that will ensure adequate protection and valuation of these resources.	Lead	Lead	Direct; Support	SLC	CCC, DFG, BCDC
5d	Develop and implement strategies to balance increasing recreational beach access with resource protection. Implement three projects to determine the impacts of various management techniques in representative locations.	Support	Support	Direct; Support	DPR	SCC, CCC: BCDC, SLC, RC, LG
5e	Complete the San Francisco Bay Area Water Trail Plan by January 2008 and begin construction of associated infrastructure. Investigate options for water trails in other coastal locations.	Support	Support	Direct; Support	BCDC, SCC, DBW, NGO	Cons Corps, LG, DPR, NOAA, USCG, DFG

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

F. Education and Outreach						
<i>A goal of OPC is to promote ocean and coastal awareness and stewardship.</i>						
Objective 1: Public Awareness. Increase public awareness of ocean and coastal issues and encourage individual stewardship.						
1a	Implement the recommendations and priorities on outreach in the IRO Strategy, including:					
	Improve access to and coordination of ocean and coastal information through a comprehensive ocean and coastal web portal. Build and maintain a State ocean website that is a comprehensive portal to ocean and coastal related information, including access to beach health and water quality information, a database of non-government organizations and ocean-oriented educational organizations, and a clearinghouse for sharing informational and educational materials.	Direct	Support	Direct; Support	OPC	CERES, RA, SCC, NGO, OCA, NMS
	Incorporate ocean and coastal science into K-12 and adult education programs by supporting CalEPA's Education and the Environment Initiative. Work with other state and federal organizations (such as the COSEE centers and the National Ocean Literacy Initiative), to bring ocean and coastal disciplines in the K-12 model curriculum and continuing education programs and to monitor and evaluate the effectiveness of these acts.	Support	Support	Direct; Support	CalEPA, CCC	Cons Corps
	Build a public media campaign with the National Marine Sanctuary Program and the Ocean Communicators Alliance	Support	Support	Direct; Support	NMS, RA, OPC	OCA, NOAA, CCC, SCC, NGO

Actions	OPC Role			Lead Agency	Partners
	Coordination Collaboration Integration	Policy Guidance	Funding		

1b	Support targeted outreach to decision-makers and state elected officials on the impacts of stewardship decisions, for example, impacts of land use on ocean and coastal resources. Coordinate an Oceans Forum to discuss issues and brainstorm solutions to problems, similar to the national Ocean Week held annually in Washington, DC.	Support	Support	Support	COMPASS	OPC, RA, SCC, NGO
1c	Support environmental education for children and adults, including docent programs, nature and interpretive centers, bilingual education, live webcasts to schools, and on-the-water ocean experiences.	Support	Support	Support	CCC, DPR, NGO, SCC	DFG, LG, NGO, DPR, Cons Corps

Appendix B: Agency and Organization Acronyms

ACOE	Army Corps of Engineers
BCDC	San Francisco Bay Conservation and Development Commission
BR	Bureau of Reclamation
COMPASS	Communication Partnership for Science and the Sea
Cons Corps	California Conservation Corps
CalEPA	California State Environmental Protection Agency
CCC	California Coastal Commission
CCJV	California Current Joint Venture
CGS	California Geological Survey
DBW	Department of Boating and Waterways
DFA	Department of Finance and Administration
DFG	California Department of Fish and Game
DOC	Department of Conservation
DOD	United States Department of Defense
DPR	California Department of Parks and Recreation
DWR	Department of Water Resources
EC	Energy Commission
JPA	Joint Powers Agencies
LA	Local Authorities
LG	Local Government
NPS	National Park Service
NGOs	Non Governmental Organizations
NMS	National Marine Sanctuaries
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
NPS	National Park Service
OCA	Ocean Communicators Alliance
PCJV	Pacific Coast Joint Venture
PUC	Public Utilities Commission
RA	California Resources Agency
RC	Regional Conservancies and Authorities
RI	Public and Private Research Institutions
RWQCB	Regional Water Quality Control Board
SCC	State Coastal Conservancy
SCWRP	Southern California Wetlands Recovery Project
SFBJV	San Francisco Bay Joint Venture
SLC	State Lands Commission
SWRCB	State Water Resources Control Board
UC	University of California
USCG	United States Coast Guard
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
USFWS	United States Fish and Wildlife Service
WCB	Wildlife Conservation Board

Appendix C. Stakeholder Participants in OPC Workshops and Meetings, January-June 2006

Below are the lists of OPC members, agency personnel, and stakeholders that the staff met with to gather ideas for the draft plan. In addition to speaking with these people directly, OPC has received 26 letters providing written comment on the draft strategic plan. These letters, along with any letters providing comment on this draft, will be listed in the final plan.

Northern California NGO meeting—San Francisco, February 1

Teri Shore	Bluewater Network
Mike Connor	San Francisco Estuary Institute
Jim Curland	Defenders of Wildlife
Rod Fujita	Environmental Defense
Marilyn Latta	Save the Bay
Mark Massara	Sierra Club
Jaime Kooser	San Francisco State University, Tiburon Center
Tim Eichenberg	The Ocean Conservancy
Grant Davis	The Bay Institute
Kate Wing	Natural Resources Defense Council
Linda Sheehan	Coastkeeper Alliance

Southern California NGO Meeting—Santa Monica, February 9

Mark Gold	Heal the Bay
Leslie Mintz	Heal the Bay
Chris Knight	Reef Check
Edward Cassano	Aquarium of the Pacific
Greg Helms	Ocean Conservancy
Chuck Cook	The Nature Conservancy
Mati Waiya	Ventura Coastkeeper. Wishtoyo Foundation
Tracy Egoscue	Santa Monica Baykeeper
Aida Navarro	Wildcoast
Phyllis Grifman	USC Sea Grant Program
Fay Crevoshy	Wildcoast

Science Focus Group Meeting—San Jose, March 1

Dr. Loo Botsford	UC Davis
Dr. Gary Griggs	UC Santa Cruz
Dr. Rikk Kvitek	CSU Monterey Bay
Shauna Oh	UC Sea Grant Program
Dr. Jeff Paduan	Naval Postgraduate School
Dr. Linwood Pendleton	UC Los Angeles

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Southern California Public Workshops—Los Angeles, March 22

Richard J. Lindemann	Kapolei High School
Scott Lines	City of Long Beach, Stormwater Management Program
Douglas Campbell	Campbell and Campbell
George L. Robertson	Orange County Sanitation District
Gail Osherenko	UC Santa Barbara
Charlie Saylan	Ocean Conservation Society
Dr. Maddalena Bearzi	Ocean Conservation Society
Carolee Walsh, R.N.	Aw2 Enterprises, Inc.
Chad Nelsen	Surfrider Foundation
David Nelson	Coastal Alliance on Plant Expansion
Dr. Jerry C Wilson	Fugro Pelagos
Susan M. Brodeur, P.E.	County of Orange
Donna Schroeder	UC Santa Barbara
Sarah Dunsford	NOAA
David Jacobs	UC Los Angeles
Joe Geever	Surfrider Foundation
David Kushner	Channel Islands National Park
Kate Faulkner	Channel Islands National Park
Jonathan Phinney	NOAA
Sarah Richardson	Heal the Bay

Northern California Public Workshops—Sausalito, March 23

Dave Colpo	Pacific States Marine Fisheries Commission
Mark Hixon	Oregon State University
Jodi L. Cassell	California Sea Grant Extension
Amy Dean	Farallones Marine Sanctuary Association
Claire Thorp	National Fish and Wildlife Foundation
Carol Keiper	Oikonos Ecosystem Knowledge
Dirk Rosen	Marine Applied Research & Exploration
Miriam Gordon	California Coastal Commission
Michelle Chow	Ocean Discovery!
Vic Chow	Ocean Discovery!
Tina Swanson, Ph.D.	The Bay Institute
Bucky Mace	
Rebecca Verity	Science & Technology Program Coordinator UC Office of the President
Ted Grosholz	UC Davis
Adrienne Harrison	NOAA
Becky Smyth	NOAA
Rudy Murillo	UC San Diego
Jennifer L. Palmer, M.S	Marine Conservation Biology Institute
Melinda Dorin	California Energy Commission
Brenna Langabeer Schlagenhauf	PRBO Conservation Science

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Richard Charter	National OCS Coalition
Santi Roberts	Oceana
Jennifer Fox	Energy Solutions
Tom Lambert	Cordell Bank National Marine Sanctuary Advisory Council
Angela Haren	California Coastkeeper Alliance
Len Materman	American's River Commodities
Conner Everts	Desal Response Group
Kate Bonzon	
Karen Wolowicz	Redefining Progress
Bob Spies	Applied Marine Sciences
Jim Haussenur	CMANC (California Marine Affairs and Navigation Conference)
Robert Ovetz	Turtle Island Restoration
Jan Roletto	Gulf of Farallones Natural Marine Sanctuary
Judd Boomhower	Environmental Defense
Ted Groshdz	UC Davis
Mike Connor	San Francisco Estuary Institute
Dominic Gregorio	State Water Resources Control Board
Eleanore Rewerts	NCDF
Will Travis	San Francisco Bay Conservation and Development Commission
Toby Garfield	CSU San Francisco
Heather Kerkering	MBARI
Grant Davis	The Bay Institute
Al Wanger	Coastal Commission
Tom Gandesbery	State Coastal Conservancy
Jeff Paduan	National Park Service
Paul Siri	Commonweal Ocean Policy Program
Moira McEnespy	State Coastal Conservancy
Beth Huning	SF Bay Joint Venture
Vincent Huning	Seaman's Training Center
Warner Chabot	The Ocean Conservancy
Vincent Backen	Seamen's Training Center

Ocean Protection Council Interviews—January-March, 2006

State Agency Interviews

Paul Thayer and Dwight Sanders	State Lands Commission
Sonke Mastrup and Gary Stacey	Department of Fish and Game
Peter Douglas and Al Wenger	Coastal Commission
Dominic Gregorio and Tom Howard	State Water Resources Control Board
Jerry Johns, Rick Soehren, Bill	Department of Water Resources

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Bennett, and Fawzi Karajeh	
David Johnson and Kim Sterrett	Department of Boating & Waterways
Will Travis and Steve McAdam	San Francisco Bay Conservation and Development Commission

OPC Members and Representatives Interviews

Assemblymember Pedro Nava and Andrea Graham	Assembly and OPC Ex-officio member
Bill Craven	Office of Senator Sheila Kuehl (Senate and OPC Ex-officio member)
Secretary Allan Lloyd and Ann Baker	Cal/EPA
Steve Westly, Chair, and Cindy Aronberg	State Lands Commission
Secretary Mike Chrisman	Resources Agency

Other Interviews

Jim Hausner	California Marine Affairs and Navigation Conference
Zeke Grader	Pacific Coast Federation of Fisherman's Associations
Geraldine Knatz	Port of Los Angeles
Tom Raftican	United Anglers of Southern California
Tim Schott	California Association of Port Authorities
Michael Mantell	Resources Law Group
Catherine Reheis-Boyd	Western States Petroleum Association
John Martini	California Independent Petroleum Association
Paul Michel	Coastal America

Group Agency Meeting—May 8, 2006

David Johnson	Department of Boating and Waterways
Rick Rayburn	Parks and Recreation
Fawzi Karajeh	Department of Water Resources
Caitlin Sweeney	San Francisco Bay Conservation and Development Commission
Terry O'Brien	Energy Commission
Rick York	Energy Commission
Melinda Dorin	Energy Commission
Tom Howard	State Water Resources Control Board
Dominic Gregorio	State Water Resources Control Board
Will Semmes	Conservation Corps
Al Wenger	Coastal Commission