

CALIFORNIA OCEAN PROTECTION COUNCIL

Staff Recommendation

March 11, 2011

**STATEWIDE SCIENCE INTEGRATION AND
MARINE PROTECTED AREA MONITORING PROGRAMS**

File No.: 08-123-02

File No.: 06-090-02

Project Managers: Moira McEnespy/Sheila Semans

RECOMMENDED ACTION: Authorization to disburse up to \$2,780,000 to the California Ocean Science Trust to continue implementing its science integration and statewide marine protected area monitoring programs.

LOCATION: Statewide

STRATEGIC PLAN OBJECTIVES: Research and Monitoring, Ocean and Coastal Ecosystems

EXHIBITS

Exhibit 1: Ocean Science Trust Annual Report.

Exhibit 2: Ocean Protection Council Staff Recommendation: "California Ocean Science Trust: Building Scientific Capacity" (File No. 08-123-01, November 20-21, 2008)

Exhibit 3: Ocean Protection Council Staff Recommendation: "Statewide Marine Protected Area Monitoring Program" (File No. 06-090-01, November 28, 2006)

Exhibit 4: Ocean Protection Council Staff Recommendation: "Future Marine Protected Area Baseline Data Collection: Ensuring Data Collection for all Regions" (November 20-21, 2008)

Exhibit 5: Letters of Support

RESOLUTION AND FINDINGS:

Staff recommends that the Ocean Protection Council adopt the following resolution pursuant to Sections 35500 *et seq.* of the Public Resources Code:

"The Ocean Protection Council hereby approves the disbursement of an amount not to exceed \$2,780,000 (two million seven hundred eighty thousand dollars) to the California Ocean Science Trust (OST) for two purposes: \$820,000 (eight hundred twenty thousand dollars) to continue implementing its science integration program and \$1,960,000 (one million nine hundred sixty

thousand dollars) to continue implementing its statewide marine protected area monitoring program.

This authorization is subject to the condition that prior to disbursement of funds, the OST shall submit for the review and approval of the Secretary to the Ocean Protection Council:

1. A work plan for each program, including schedule and budget.
2. The names and qualifications of any contractors that the OST intends to employ to carry out either program.”

Staff further recommends that the Ocean Protection Council adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the Ocean Protection Council hereby finds that:

1. The proposed project is consistent with the purposes of Division 26.5 of the Public Resources Code, the California Ocean Protection Act.
2. The proposed project is consistent with the Ocean Protection Council's current grant program funding guidelines.”

PROJECT SUMMARY:

Staff recommends that the Ocean Protection Council (OPC) disburse up to \$2,780,000 to the California Ocean Science Trust (OST) to continue implementing its science integration and statewide marine protected area monitoring programs. Descriptions of these programs are provided below and in OST’s most recent annual report, attached as Exhibit 1. Current funds for these programs will be expended by March 2011; additional funds are needed to continue both of these programs for two more years.

Science Integration. The OST’s Executive Director serves as the OPC’s Science Advisor and co-chairs the multi-disciplinary Science Advisory Team (SAT). Since February 2007, the SAT has provided science integration and coordination services to the OPC and other governmental entities. Specifically, OST and the SAT work with managers and decision makers to identify science priorities and needs, provide relevant information to address management questions, review project proposals and project deliverables, and integrate science into the OPC’s decision-making. The proposed disbursement would provide an additional \$820,000 for OST to continue science integration services through March 2013.

Marine Protected Areas Monitoring Enterprise. The Marine Protected Areas Monitoring Enterprise was established under the auspices of the Ocean Science Trust to lead development of a cost-effective, focused, and cohesive approach to monitoring of and reporting on marine protected areas (MPAs) established under the Marine Life Protection Act. The proposed disbursement would provide an additional \$1,960,000 to the OST to support the MPA Monitoring Enterprise’s continuing work to (1) advance development of effective scientific approaches to monitoring, including data collection, analysis and reporting; (2) steward and share data, scientific analysis and other information, including baseline and long-term monitoring information; and (3) communicate monitoring results to strengthen understanding and application of MPA monitoring and support adaptive MPA management. This authorization would continue these activities for two more years, through approximately June 2013.

PROJECT DESCRIPTION:

Project Background and History:

Science Integration. The U.S. Commission on Ocean Policy and the Pew Oceans Commission call out a need for expert knowledge, research, and monitoring data to be integrated into the policy and management sectors. Recommendations include: 1) integrating scientific information and improving understanding of coastal and ocean systems; 2) building knowledge and capacity in socio-economic data and analyses; 3) educating key decision-makers, stakeholders, and the public, as well as future ocean leaders, in cross disciplinary approaches; and 4) collaborating and coordinating across sectors.¹ Although these are desirable goals, a recent study has found the following barriers to science informing governmental policy: 1) Low levels of literacy and respect between natural scientists and social scientists; 2) temporal barriers (e.g., budget, election, and permitting cycles are not on the same timeline as research and review cycles); 3) cultural divides between key decision-makers and scientist; and 4) lack of scientists' political influence (e.g., lack of advocates for science and research needs) and politicization of science (e.g., lack of transparent processes regarding research funding and support for publications.).²

Since February 2007, the OST has provided science integration and coordination services that have helped remove these barriers for the OPC in the following ways:

- *Availability of an OPC Science Advisor and team of experts:* The OST's Executive Director serves as the OPC's Science Advisor (since February 2007), is part of the OPC's management team, and co-chairs a multi-disciplinary Science Advisory Team (formed in September 2008).
- *Integration of socio-economic expertise:* The Science Advisor will ensure that the Science Advisory Team represents all needed disciplines, and is currently working to add social scientists and economists.
- *Scientific Peer Review:* The Science Advisor has created a timely process for procuring scientific review of project proposals and project deliverables.
- *Integration of Scientists and Managers:* The Science Advisor attends meetings and workshops in order to share information between the scientific community, agencies, and stakeholders. In addition, OPC's management team participates in bi-annual meetings of the Science Advisory Team.
- *Identification of research priorities:* The Science Advisory Team helps set science priorities and needs based on the management questions of resource and regulatory agencies, and is involved in development of the OPC's Strategic Plan update.
- *Spotlight on Science:* The Science Advisor develops a "Spotlight on Science" for each OPC meeting in order to help explain and frame relevant issues.

The proposed authorization would provide an additional \$820,000 to OST to continue science integration services through March 2013. The OPC initially authorized disbursement of funds to OST to build science capacity and support science integration in February 2007, and most

¹ *An Ocean Blueprint for the 21st Century* (US Commission on Ocean Policy, 2004, Washington, DC). *America's Living Oceans: Charting a Course for Sea Change* (Pew Oceans Commission. 2003. Washington, DC).

² *Integrating Science into Coastal and Ocean Policy and Management: Barriers and Solutions* (A White Paper by T.C. Hoffmann & Associates, LLC in coordination with the Woods Institute for the Environment at Stanford University, May 2007).

recently November 2008 (see Exhibit 2).

Marine Protected Areas Monitoring Enterprise.

Marine Life Protection Act and MPA Design

The Marine Life Protection Act (MLPA) became law in 1999 (Chapter 10.5 of the California Fish and Game Code, Sections 2850 to 2863) and requires the California Department of Fish and Game (DFG) to develop a plan for redesigning MPAs in California state waters to protect the structure, function and integrity of marine ecosystems and protect the natural abundance and diversity of marine life, among other goals. In August 2004, the MLPA Initiative was launched to conduct a public planning process and develop recommendations for how the MLPA might be implemented.

Following extensive public processes in each of the central coast, north central coast and south coast study regions,³ the MLPA Blue Ribbon Task Force transmitted MPA recommendations to the DFG (central coast) or California Fish and Game Commission (north central coast and south coast); ultimately the commission voted to adopt a regional MPA network component in each of these study regions, using the recommendations from the task force as a starting point for its deliberations. MPAs in the central coast took effect in September 2007 and MPAs in the north central coast took effect in May 2010; MPAs in the south coast were adopted on December 15, 2010 and are expected to take effect in mid-2011 pending completion of rule-adoption proceedings. In addition, in February 2011 the MLPA Blue Ribbon Task Force delivered a set of recommendations to the commission relating to MPAs and special closures in the north coast region.

MPA Monitoring

During the implementation of the MPA design process, the OPC focused resources on helping to establish an approach to monitoring the state network of MPAs. The MLPA requires monitoring of MPAs, specifically “monitoring, research and evaluation at selected sites to facilitate adaptive management of MPAs and ensure that the [MPA] system meets the goals stated⁴.” According to DFG’s MLPA Final Draft Adaptive Management and Monitoring and Evaluation Framework, “adaptive management requires learning from current experience to improve the process of achieving the goals of the MLPA over time. Success requires (a) Appropriately scaled, sustained institutional capacity to make legitimate choices; (b) Possession, broad communication, and use of relevant information; and (c) Use of (a) and (b) to effect desired changes in policies, programs, and human behaviors intended to achieve the goals of the MLPA”. To meet these requirements, a well-designed monitoring, evaluation and adaptive management program was created in California.

In 2008, the OPC authorized \$2,000,000 to the OST to design and begin implementation of a statewide MPA monitoring program (see Exhibit 3). The MPA Monitoring Enterprise was launched as a program of the Ocean Science Trust to lead development of an efficient, cost-effective, statewide MPA monitoring program that meets MLPA requirements. The Monitoring Enterprise has used the initial funding to hire staff, build organizational structure, develop a list

³ See study area maps at <http://www.dfg.ca.gov/mlpa/>

⁴ Refer to Section 2853(c)(3) for MLPA goals; see also sections 2853(a) and 2856(a)(2)(H)

of monitoring priorities with DFG and other core partners (including the OPC, the Natural Resources Agency, Fish and Game Commission, and the MLPA Initiative), create a framework for monitoring the state's MPA network, and design the North Central Coast MPA Monitoring Plan (see below). OPC funds were also provided to enable the Monitoring Enterprise to proceed with development of the South Coast MPA Monitoring Plan, which is currently underway.

Regional MPA Monitoring

The MLPA Master Plan for MPAs directs that MPA monitoring programs be developed sequentially as MPA planning is completed for each region.⁵ At the time of the Monitoring Enterprise's launch, initial MPA monitoring had been planned and launched in the Central Coast and MPA planning was underway in the North Central Coast. Following the guidance of the MLPA Master Plan, in 2009 the Monitoring Enterprise began its work in the North Central Coast.

In close collaboration with DFG and through extensive stakeholder and scientific consultation, the Monitoring Enterprise developed a monitoring approach and framework to guide monitoring of MPAs statewide, and applied the approach and framework to suit the characteristics of the North Central Coast region. The *North Central Coast MPA Monitoring Plan*⁶ (Plan) was presented to the Fish and Game Commission and adopted on April 7, 2010, establishing the overall approach and framework, and their specific application to the North Central Coast region, as state policy. The initial three years of data collection envisioned in the Plan focused on baseline data collection, and the Monitoring Enterprise designed and launched the baseline monitoring program in summer 2010 (see below). The Monitoring Enterprise and DFG continue to discuss the optimal way to implement and fund the Plan after the baseline data collection phase is complete.

In late 2010, using bridge funding provided by the OPC, the MPA Monitoring Enterprise began a similar process for the recently-approved MPAs in the South Coast MLPA study region. With the proposed authorization, it is anticipated that a South Coast monitoring plan will be completed, and a baseline monitoring program designed and launched, in the first half of this year. It is further anticipated that the monitoring planning process will start for the North Coast MLPA study region later this year, after the Blue Ribbon Task Force transmits MPA recommendations for the region to the Fish and Game Commission.

Baseline MPA Monitoring

In 2008, the OPC has also authorized up to \$12,000,000 to collect baseline monitoring data in the North Central Coast, South Coast, and North Coast regions of the MLPA process (see Exhibit 4), building on prior OPC expenditures of nearly \$4,000,000 to support MPA baseline data collection in the Central Coast. Baseline data will provide the Monitoring Enterprise with information (biological as well as socioeconomic) on conditions inside and outside the MPAs at the time of implementation, and will provide a comparison for assessing program impacts in coming years. When the MPAs for a specific region are approved, the MPA Monitoring Enterprise immediately begins implementation of the baseline programs, working with OPC, DFG, and the California Sea Grant Program (Sea Grant) to decide priority protocols, solicit and

⁵ [California Marine Life Protection Act Master Plan for Marine Protected Areas, Revised Draft, Jan. 2008, p. 73.](#)

⁶ http://www.calost.org/reports/NCC_Monitoring_Plan_and_Appendices.pdf

review applications from scientists, and collect and disseminate the data to resource managers and others. OPC funds authorized specifically for data collection are disbursed directly to Sea Grant to administer the suite of baseline monitoring projects under the direction of the MPA Monitoring Enterprise. To date, the Monitoring Enterprise has led the launch of the North Central Coast MPA Baseline Program, which began in 2010 and will continue through 2013. South Coast and North Coast MPA Baseline Programs will be developed alongside the monitoring plans for those regions. The South Coast Baseline Program is expected to launch in mid-2011.

Project Details and Scope of Work:

Science Integration. The OPC Science Advisor will continue to lead science integration and management of the Science Advisory Team. In providing these services to the OPC, the OST may undertake the following tasks:

- Connect science to policy and management; disseminate information between the scientific community and relevant state agencies.
- Provide expert technical review of OPC project proposals and project deliverables to ensure credibility of science as well as build science knowledge and capacity across the state.
- Develop research priorities linking science to management; work with researchers and experts to conduct and present research, analyses, and syntheses that are relevant and useful for decision makers.
- Prepare consensus/position statements on relevant topics selected with input from the OPC management team.
- Support and host workshops with decision-makers and scientists on issues the OPC management team has determined are relevant to the OPC's work.
- Respond to information requests from the OPC and its management team.

Work of the OST to integrate science into government policy on ocean and coastal issues will be done in close coordination with OPC staff, with the goal of providing high-quality scientific information to the OPC, its staff, and other agencies and stakeholders as appropriate. Specific projects will be taken on as they are added to a workplan approved in advance by OPC staff.

Marine Protected Areas Monitoring Enterprise. The primary functions of the Monitoring Enterprise are:

- (1) *Science*, to foster, apply and extend the best available science to ensure MPA monitoring meets management needs;
- (2) *Information management*, to steward and share monitoring data and develop innovative technology solutions that meet the information needs of decision-makers and the public, and;
- (3) *Communications*, to understand decision-maker and public priorities and develop tools and approaches to share timely, relevant monitoring results that inform the management dialogue.

Science Program

The Monitoring Enterprise's science program ensures that the design of MPA monitoring, collection and analysis of data, and reporting of results are grounded in science, promote testing and refinement of monitoring methods, and encourage research to improve monitoring efficiency and effectiveness. The science component includes leading the development, implementation and review of baseline and long-term monitoring programs, the analysis of monitoring data, and

the reporting of results. This component includes developing externally-reviewed protocols, Quality Assurance/Quality Control approaches and new analytical approaches, and advancing reporting tools to evaluate MPA progress towards MLPA goals. It is anticipated that the proposed funding will result in:

- Science-based, stakeholder supported monitoring plans (baseline and long-term) adopted for the South and North Coast regions
- Effective MPA monitoring implemented in the South and North Coast MLPA regions through Baseline Programs in each region
- Analysis and reporting on Central Coast baseline monitoring to support the 5-year review recommended in the MLPA Master Plan
- Review and modification of the Central Coast Monitoring Plan to align the approaches with the Monitoring Enterprise's MPA framework
- Initial development of the formal Statewide Monitoring Plan.

Information Technology

The information management program that will be developed and maintained by the Monitoring Enterprise will steward and share data, results, and other information to improve MPA monitoring and management. As monitoring information becomes available, access to that information by the public, resource managers, policymakers, and researchers will be provided and encouraged. The information management component includes developing or refining data and meta-data formats and standards and designing and implementing an online data and information management system (IMS). Following an initial design and build phase (funded in part by previously authorized OPC funds), IMS development will continue through incremental addition of system functions useful to key user groups including stakeholders and decision-makers, integration of baseline data, and inclusion of monitoring analyses and results. Outcomes anticipated by the proposed authorization include:

- IMS system (Monitoring Information Hub) 1.0 designed, built and launched and viewed as an impartial provider of relevant, credible and timely MPA monitoring information
- Metadata and data standards that will facilitate data sharing as well as integrated analyses of monitoring data
- Additional functionality of the Hub as identified by managers and other key users, focusing initially on providing monitoring results in advance of the anticipated 5-year review of the Central Coast MPAs.

Communication Program

The communications program provides timely, meaningful information to strengthen understanding and application of MPA monitoring. Program activities focus on understanding and reflecting legal requirements, management needs, and public priorities for MPA monitoring, and on providing monitoring information most useful for supporting adaptive MPA management. The current focus of the communications program is to design and implement a communications work element that will ensure monitoring information is effectively transmitted to decision-makers, stakeholders, scientists and others interested in California's MPAs. Outcomes anticipated from the proposed authorization include:

- Communications tools including a website and regular newsletter to increase information dissemination and understanding of the role and work of the Monitoring Enterprise
- Monitoring Reports – Full and summary versions (In Brief documents) of the South Coast and North Coast MPA Monitoring plans will be developed to facilitate communication of the monitoring approach and metrics to a broad audience. Reports will be produced from the best-practices and research prioritization efforts of the science program. These will be designed appropriately for audiences including the Fish & Game Commission, scientific publication and stakeholders.
- Central Coast strategic communications project – A strategic communications project will be designed and launched for the Central Coast regional review. Emphasis will be on tailoring messages to educate various stakeholder groups about the Central Coast monitoring reports.

Site Description:

The proposed authorization will support statewide science integration and MPA-ME programs. The following links to OST’s and DFG’s websites provide more detailed information about the system of MPAs being developed across the state: http://www.calost.org/monitoring_ent.html and <http://www.dfg.ca.gov/mlpa/>.

PROJECT GRANTEE:

The OST is a nonprofit public-benefit corporation under section 501(c)(3) of the Internal Revenue Code and was established pursuant to the California Ocean Resources Stewardship Act of 2000 to encourage coordinated, multi-agency, multi-institution approaches to translating ocean science to management and policy applications. The OST’s mission is to ensure that the best available science is applied to California policies and ocean management to successfully maintain a healthy, resilient, and productive ocean and coast.

Consistent with its mission, the OST has successfully provided scientific support to the OPC since early 2007. It is continuing to build the MPA Monitoring Enterprise into an effective program that is efficiently monitoring the state’s designated MPAs.

PROJECT FINANCING

	Science Coordination / Integration	MPA-ME	
Ocean Protection Council (Proposition 84)	\$800,000	\$1,960,000	
Pacific States Marine Fisheries Commission (grant to OPC)	\$20,000		
TOTALS:	\$820,00	\$1,960,000	\$2,780,000

The anticipated source of the majority of the funds will be the fiscal year 09/10 appropriation from the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84) to the California Ocean Protection Trust Fund.

Proposition 84 authorizes the use of these funds for purposes consistent with Section 35650 of the Public Resources Code (Pub. Res. Code § 75060(g)). Under Section 35650(b), Ocean Protection Trust Fund monies may be expended for projects authorized by the OPC that are identified as appropriate Trust Fund purposes. The project is consistent with the Trust Fund purposes as discussed in the following section.

This project is also appropriate for prioritization under the selection criteria set forth in Section 75060(g), which provides that the OPC will give priority to projects to develop scientific data needed to adaptively manage the state's marine resources and reserves, to foster sustainable fisheries using loans and grants, and to conserve marine wildlife. The OST's science integration and MPA-Monitoring Enterprise programs meet these criteria because they seek to develop and integrate science into the state's management of its ocean and coastal resources; to protect the structure, function and integrity of marine ecosystems; and to protect the natural abundance and diversity of marine life.

The anticipated source of \$20,000 of the funds is a grant from the Pacific States Marine Fisheries Commission to support science integration tasks that will further the work of the West Coast Governors' Agreement climate change Action Coordination Team.

CONSISTENCY WITH CALIFORNIA OCEAN PROTECTION ACT:

The proposed project is consistent with the Ocean Protection Act, Division 26.5 of the Public Resources Code, in the following respects:

Science Integration. The science integration component of the proposed authorization remains consistent with the Ocean Protection Act as described in Exhibit 2.

Marine Protected Areas Monitoring Enterprise. Public Resources Code § 35615(a)(2) directs the OPC to establish policies to coordinate the collection of scientific data related to coastal and ocean resources. In addition, PRC § 35650(b)(2) specifies allowable projects on which the California Ocean Protection Trust Fund may be spent. In particular, subsection (b)(2)(G) identifies projects that "provide monitoring and scientific data to improve state efforts to protect and conserve ocean resources" as appropriate for funding.

The MPA Monitoring Enterprise component of the proposed authorization is consistent with these sections because it seeks to (1) advance development of scientific, efficient and effective approaches to monitoring, including data collection and analysis; (2) steward and share data, results and other information, including baseline and long-term monitoring information; and (3) communicate monitoring results to strengthen understanding and application of MPA monitoring and support adaptive MPA management.

CONSISTENCY WITH THE OPC'S STRATEGIC PLAN:

OPC staff are currently developing an update to the OPC's 2006 Strategic Plan. Until the new plan is adopted in December 2011, staff will continue to rely upon the 2006 plan in evaluating projects brought before the OPC.

Science Integration. The science integration component of the proposed authorization remains consistent with **Goal A (Governance) Objective 2b, Goal B (Research and Monitoring) Objective 1a, Goal B (Research and Monitoring) Objective 1b, and Goal B (Research and Monitoring) Objective 2i** as described in Exhibit 2.

Marine Protected Areas Monitoring Enterprise. The MPA Monitoring Enterprise component of the proposed authorization remains consistent with **Goal E (Ocean and Coastal Ecosystems) Objective 1** and **Goal B (Research and Monitoring) Objective 2** as described in Exhibit 3.

CONSISTENCY WITH THE OPC'S GRANT PROGRAM FUNDING GUIDELINES:

The proposed project is consistent with the OPC's Grant Program Funding Guidelines adopted November 20 2008, in the following respects:

Required Criteria

1. **Directly relate to the ocean, coast, associated estuaries, or coastal-draining watersheds:**
The science integration component of the proposed authorization will ensure science is informing California policy and management in order to maintain a healthy, resilient, and productive ocean and coast for the benefit of current and future generations. The MPA Monitoring Enterprise component of the proposed authorization will promote ocean and coastal marine resource management and conservation by improving the collection and use of data on and understanding of marine species, populations, habitat quality, and ecosystem condition.
2. **Support of the public:** Both the science integration and MPA Monitoring Enterprise components of the proposed authorization are supported by numerous governmental, academic, and NGO entities. See letters of support in Exhibit 5.
3. **Greater-than-local interest:** Both the science integration and MPA Monitoring Enterprise components of the proposed authorization are statewide in scope.

Additional Criteria

4. **Innovation:** The science integration component of the proposed authorization will continue a new approach to the development of ocean policy by promoting coordination between scientists and state agencies, and integrating science into decision-making. The MPA Monitoring Enterprise component of the proposed authorization continues development and implementation of a cost-effective, focused, and cohesive approach to monitoring of and reporting on MPAs established under the MLPA. The newly-defined approach to MPA monitoring includes a globally pioneering approach to tracking the condition of ocean ecosystems, and represents a fundamental advancement for adaptive management of MPAs and support of other ecosystem-based management mandates.
5. **Improvements to management approaches or techniques:** See the "innovation" criterion, above.
6. **Resolution of more than one issue:** The science coordination component of the proposed authorization will identify science priorities and needs, provide relevant information to address management questions, review project proposals and end products, and integrate science into decision-making. The MPA Monitoring Enterprise component of the proposed authorization will support scientific research, marine resource management, and monitoring mandates under the MLPA.
7. **Coordination:** The science coordination component of the proposed authorization will involve and improve coordination among scientists, policy makers, and resource managers. The MPA Monitoring Enterprise component of the proposed authorization involves a

partnership between the OST and the DFG, and coordinates extensively with other state and federal agencies, academic institutions, and private organizations, especially on monitoring implementation.

COMPLIANCE WITH CEQA:

Both components of the proposed authorization are categorically exempt from review under the California Environmental Quality Act (“CEQA”) pursuant to 14 Cal. Code of Regulations Section 15306 because they involve only data collection, research, experimental management and resource evaluation activities that will not result in a serious or major disturbance to an environmental resource. These activities may be a part of a study leading to an action which the OPC or another public agency has not yet approved, adopted, or funded. Staff will file a Notice of Exemption upon approval by the OPC.