



## MEMORANDUM

TO: California Ocean Protection Council

FROM: Rebecca Pollock, Project Manager, State Coastal Conservancy

DATE: November 28, 2006

RE: Concurrence with Ocean Protection Council priority scientific research projects selected for FY06-07 Sea Grant awards (Agenda Item #8)

ATTACHMENTS: Table 1: Scientific Research Projects Selected for Funding

Attachment 1: September 23, 2005 Staff Recommendation "Ocean Protection Council and Sea Grant Partnership for Ocean and Coastal Research" (without Exhibits)

Attachment 2: Ocean Protection Council Priorities and Guidelines for Sea Grant Research Proposals

## REQUESTED ACTION:

Staff recommends the council approve the following resolution:

"The Ocean Protection Council finds that the scientific research projects selected by the California Sea Grant and University of Southern California Sea Grant Programs are consistent with council priorities contained in the Information, Research, and Outreach Strategy and meet the grant conditions approved at the council's September 23, 2005 meeting."

## BACKGROUND:

At the September 23, 2005 public meeting, the council authorized a grant of \$1,000,000 to the State's two Sea Grant programs to fund scientific research projects that support the council's priorities (Attachment 1). California Sea Grant, based at University of California San Diego Scripps Institution of Oceanography, and the University of Southern California (USC) Sea Grant were identified as the appropriate entities to administer the solicitation, peer-review, and grant award process for research proposals submitted for funding in 2006. The staff recommendation and grant agreements require that prior to awarding funds the council's concurrence must be obtained for the selected research projects recommended by Sea Grant. The council approved the staff

recommendation with the condition that the solicitation for proposals indicate a preference for collaborative and cross-boundary or regional research; to that end, researchers were encouraged to collaborate with Mexico or neighboring states.

In January 2006, the two Sea Grant programs each released a request for proposals (RFP) soliciting preliminary proposals for research projects supporting council priorities in the Information, Research and Outreach Strategy and in accordance with the council's Priorities and Guidelines for Sea Grant Research Proposals (Attachment 2). A total of 99 preliminary proposals were received: California Sea Grant received 88; USC Sea Grant received 11. All preliminary proposals were reviewed by the Resources Agency Sea Grant Advisory Panel (RASGAP) for their application to state needs, under the overarching consideration of supporting ecosystem-based management as outlined in the Priorities and Guidelines for Sea Grant Research Proposals. The preliminary proposals were also reviewed by the Sea Grant programs' technical review committees for scientific validity. Projects were selected and principal investigators notified to submit full proposals, with comments for improvement and modification.

Thirty-six final proposals were submitted in all: 30 to California Sea Grant and six to USC Sea Grant. These final proposals were reviewed by RASGAP and the technical review committees, including written reviewers that submitted extensive comments.

Council staff was involved in each step of the review process to provide reviewers with guidance on council priorities, previously funded projects, and the council's strategic plan. The final list of projects that are recommended for funding were selected after considering the RASGAP and Sea Grant rankings and deliberation among the Sea Grant staff and the council's team. Many high-quality proposals were submitted. The final selection was made from the top-ranked proposals and was based on either the project's immediate need or relevance to filling gaps in information needed to implement ecosystem-based management.

The Sea Grant programs require an annual progress report for each project, from which summaries will be generated for the council. Each project will be funded for two years. Projects that require a third year of funding (as defined in the full proposal) will receive funds pending availability and based on annual progress reports submitted.

### **Selected Projects**

As identified in the Project Financing section of the staff recommendation, council-directed funds were distributed such that California Sea Grant was awarded \$800,000 and USC Sea Grant was awarded \$200,000. All of the selected investigations support actions identified in the council's Five-year Strategic Plan and the Information, Research and Outreach Strategy, and each is tied to management at an ecosystem-based level.

The projects selected for funding through both programs are summarized in Table 1. The funding amount reflected in the Funding Request column of Table 1 is for two years of project support. This is therefore not the total amount of funding requested for the two projects proposed for three years in duration. As indicated above, the third year of

funding will be awarded based on availability of funds and acceptable progress. Further, the amount indicated in the Funding Request column will be adjusted based on Sea Grant discussions with the projects' principal investigators to address reviewer comments and to meet the state-required cap on indirect costs.

### *California Sea Grant Program*

Five projects are recommended for funding through the California Sea Grant Program. The projects include two cross-boundary studies, as encouraged by the council, and cover a range of prominent ocean and coastal issues. In addition to supporting ecosystem-based management, the first three projects address elements of the council's strategic plan relating to sustainable fisheries, Marine Life Management Act (MLMA) implementation, data collection, and possible marine reserve design.

- The MLMA directs the Department of Fish and Game (DFG) to develop plans for sustainable fisheries management and to improve adaptive management of these fisheries. To do so, data must be collected for economically important fisheries that are presently lacking sufficient scientific information. Sheephead are a key nearshore commercial fishery that cannot be appropriately managed because of lack of scientific data. **Casele** and colleagues propose a study entitled *Assessing Changes in Life History Traits and Reproductive Function of California Sheephead across its Range: Historical Comparisons and the Effects of Fishing*. Investigators will collect critical data to fill the gap identified in DFG's Nearshore Fishery Management Plan.
- The collaborators on **Graham's** project titled *Binational Studies Leading to an Ecosystem-based Management Strategy for the Common Thresher Shark and Other Fishery Resources in the Southern California Bight* include fisheries scientists, commercial fishermen, and artisanal fishermen in Mexico. The study will provide fishery managers in California and Mexico with important data on this heavily exploited commercial species. Inclusion of fishery data on the common thresher shark from the Mexican region of the Southern California Bight has been a missing piece of the bigger picture, and will result in an understanding of movement patterns and essential habitat of juveniles. The project also includes a significant outreach component: namely, educational workshops on shark biology and conservation in the Southern California Bight.
- Understanding the interactions between benthic community species and their habitat is essential to determining how features of the environment affect survival and movement patterns, and how species in turn affect the structure of their communities. There is presently no fishery-independent data for the spiny lobster, and baseline ecological data is much needed on this commercially-significant species. Identifying factors influencing abundance, range, and habitat use is essential for appropriate design of marine reserves that protect essential habitat, and for implementing sustainable fishing policies. **Hovel's** proposal *Spiny Lobster Movement, Habitat Use and Abundance in Southern California: Bottom-up and Top-down Interactions in Kelp and Seagrass Habitats* will provide

critical information to the Department of Fish and Game, National Marine Fisheries Service, US Navy, and the Port of San Diego for these purposes.

- The **Kuris and Lafferty** study *Parasites as Indicators of Coastal Wetland Health* will determine whether parasites in snails are a cost-effective tool for characterizing wetland biodiversity and ecosystem function. Identifying biological indicators of the health of California's coastal wetlands will be a great advancement in assessing the performance of restoration efforts. This work could lead to the integration of a new tool for monitoring programs across the state. The project supports the elements of the council's strategic plan concerning ecosystem assessment and restoration as well as innovative approaches for ecosystem-based management.
- In a unique and timely proposal, **Young's** project *Evaluating Current Ocean Management Systems to Facilitate the Development of Ecosystem-based Management* focuses on the California Current Large Marine Ecosystem, and will utilize the soon-to-be completed ocean and coastal law inventory compiled by council staff. The project will identify and analyze laws and regulations in marine management, including coordination lapses and inconsistencies. To complete this study, a new methodology and tool to quantify institutional interactions will be used, and case studies will be conducted to "ground truth" the legal analysis. As a result, state resources managers will be better able to plan for ecosystem-based management based on the recognition of present inconsistencies in ocean policies, areas where coordination can improve, and the priorities for successful implementation. By targeting the California Current Large Marine Ecosystem, the project crosses boundaries along the entire west coast, including Oregon, Washington, and Mexico.

#### *USC Sea Grant Program*

Two projects are recommended for funding through the USC Sea Grant Program. The projects focus on urban water quality and two urgent marine policy issues.

- The **Lowe** project *Site Fidelity and Depth Preferences of Nearshore Reef Fishes on San Pedro Shelf Offshore Petroleum Platforms* addresses a salient policy issue dubbed the rigs-to-reefs debate. Policymakers deciding the fate of offshore oil rigs will be aided by the timely information provided by the Lowe investigation, which focuses on the less-studied San Pedro Shelf platforms where the natural habitat is sandier than the Santa Barbara Channel area, and will compare the two. The study targets commercially and recreationally valuable reef fish species and will assist with understanding the artificial ecosystems created if rigs are allowed to remain in place; and the alterations to surrounding ecosystems and fish assemblages encouraged by these permanent structures. Information relevant at the ecosystem level is crucial to making effective and appropriate decisions about the future of these structures with regard to marine species and habitat interactions.

- **Shipe** will examine the impacts of nutrient and sediment loading in coastal waters on harmful algal blooms in the study *The Effects of Urban Stormwater Runoff on Phytoplankton Dynamics in Santa Monica Bay*. Because phytoplankton are at the base of the ecosystem, their interaction with the physical environment effects the ecosystem at the trophic level. The proliferation of harmful algae has the potential to throw the entire ecosystem out of balance. This project will provide important information about linkages between stormwater and the increasing intensity of harmful algal blooms along the California coast.

### **Next Steps**

Upon council concurrence with the selected projects, staff will release funds to the two Sea Grant programs to allow the programs to begin funding the projects. Sea Grant will administer the grants on behalf of the council and provide annual reports to council staff on the progress of the research projects. Project deliverables and data will become available at the conclusion of the projects awarded.

**Table 1**  
 Scientific Research Projects Selected for Funding

PI	Title	Funding Request (2-yr)	Objective	Duration	Average Technical Score	RASGAP Score
<b>California Sea Grant Program</b>						
<b>Caselle</b>	<i>Assessing Changes in Life History Traits and Reproductive Function of California Sheephead Across its Range: Historical Comparisons and the Effects of Fishing</i>	\$156,192	Address data deficiencies identified during the recent stock assessment of CA sheephead in order to reduce uncertainties and aid resource management.	2	2.125	1.71
<b>Graham</b>	<i>Binational Studies Leading to an Ecosystem-based Management Strategy for the Common Thresher Shark and Other Fishery Resources in the Southern California Bight</i>	\$230,130	Initiate a binational research program leading to inclusion of fishery data from Mexican region of Southern CA Bight into estimates of shark species catch rates, and into pelagic fishery datasets used for resource management.	2	2	2
<b>Hovel</b>	<i>Spiny Lobster Movement, Habitat Use and Abundance in Southern California: Bottom-up and Top-down Interactions in Kelp and Seagrass Habitats</i>	\$162,537	Describe interactions between CA spiny lobsters and benthic communities within disparate habitat types in southern CA.	3	1.75	2
<b>Kuris and Lafferty</b>	<i>Parasites as Indicators of Coastal Wetland Health</i>	\$132,331	Develop and assess the use of larval trematode parasites in snails as a cost-effective and integrative tool for characterizing wetland biodiversity and ecosystem function.	3	1.625	2
<b>Young</b>	<i>Evaluating Current Ocean Management Systems to Facilitate the Development of Ecosystem-based Management</i>	\$62,805	Assess uncoordinated and conflicting marine management between CA and other jurisdictions (OR, WA, Baja, and Mexico) quantitatively and comprehensively, in order to facilitate implementation of EBM for CA's coastal and marine ecosystems.	2	1.95	2
<b>USC Sea Grant Program</b>						
<b>Lowe</b>	<i>Site Fidelity and Depth Preference of Nearshore Reef Fishes on San Pedro Shelf Offshore Petroleum Platforms</i>	\$81,554	Assess ecological importance of offshore oil platforms by investigating aspects of fish assemblages and interactions and comparing two heavily used but physically distinct areas.	2	1.44	2.0
<b>Shipe</b>	<i>The Effects of Urban Stormwater Runoff on Phytoplankton Dynamics in Santa Monica Bay</i>	\$106,856	Determine linkages between stormwater runoff and harmful algal blooms.	2	1.3	1.57



## CALIFORNIA OCEAN PROTECTION COUNCIL

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### Ocean Protection Council Priorities and Guidelines for Sea Grant Research Proposals

This document provides guidance to researchers preparing proposals to submit to Sea Grant for possible funding by the California Ocean Protection Council (OPC).

#### Background

Creation of the OPC was mandated by the California Ocean Protection Act (COPA), which makes specific declarations regarding the preservation of ecosystems and the tools necessary to achieve those protections. Principally, COPA charges the OPC with coordinating the activities of ocean-related state agencies to improve the effectiveness of protection efforts within existing fiscal limitations; establishing policies to coordinate the collection and sharing of scientific data related to coast and ocean resources between agencies; identifying and recommending to the Legislature changes in state and federal law and policy; and providing grants or loans for projects or activities that improve the management and protection of ocean and coastal resources and ecosystems.

At its public meeting on September 23, 2005, the OPC authorized a partnership with California's two Sea Grant programs for the purposes of funding scientific research supporting OPC research priorities. These priorities are defined by the California Ocean and Coastal Information, Research, and Outreach Strategy (IRO)<sup>1</sup>, which was adopted at this same meeting. The OPC approved disbursement of \$1,000,000 of tidelands oil revenues to the two Sea Grant programs (\$800,000 to California Sea Grant College Program, \$200,000 to University of Southern California Sea Grant Program) to award and administer grants for high-quality, peer-reviewed, scientific research.

According to reports by the US Commission on Ocean Policy and the Pew Oceans Commission, ecosystem-based management should be a cornerstone of new ocean policies. Ecosystem-based management is a holistic, interdisciplinary approach to resource management that accounts for the interconnectedness of the entire ecosystem (including humans) with the goal of maintaining ecosystem health, productivity, and resilience so that it can continue to provide essential services. Ecosystem-based management does not focus on a single species, activity, or sector. Rather, it addresses multiple species, habitats, and cumulative impacts, and recognizes the interdependencies of ecological, social, economic, and institutional perspectives.<sup>2</sup> COPA reiterates California's policy for implementing ecosystem-focused management and emphasizes that governance of ocean resources must be guided by these principles.

#### Guidelines for Research

The OPC will fund research that meets the priorities defined in the IRO. *The overarching priority for research funded by the OPC in response to Sea Grant's 2006 call for proposals is ecosystem-based management.*

Research projects must address or substantially contribute to management, protection, conservation, or restoration of the State's coastal and ocean resources. These endeavors must support the mandatory provisions of COPA and be consistent with the actions contained in Governor Schwarzenegger's ocean action plan<sup>3</sup>.

<sup>1</sup> [http://resources.ca.gov/copc/InfoResOut\\_Strategy\\_final.pdf](http://resources.ca.gov/copc/InfoResOut_Strategy_final.pdf)

<sup>2</sup> McLeod, K. L., J. Lubchenco, S. R. Palumbi, and A. A. Rosenberg. 2005. Scientific Consensus Statement on Marine Ecosystem-Based Management. Signed by 219 academic scientists and policy experts with relevant expertise and published by the Communication Partnership for Science and the Sea at <http://compassonline.org/?q=EBM>.

<sup>3</sup> [http://resources.ca.gov/ocean/Cal\\_Ocean\\_Action\\_Strategy.pdf](http://resources.ca.gov/ocean/Cal_Ocean_Action_Strategy.pdf)



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Results of funded projects will preferably be disseminated in a product accessible by managers or conveyed to policymakers. Proposed research that includes, benefits, or results in ecosystem-based management applications will be ranked as higher priority during the review process. Research will be considered that involves cross-boundary or regional aspects, such as regional and international coordination. In addition to these considerations, proposals should incorporate the following requirements defined in the IRO:

- Demonstrate how the project can assist, complement, or augment the work of government agencies or private sector interests in their efforts to manage, protect, conserve, or restore coastal or ocean resources;
- Be supported by, prepared in cooperation with, or of expressed interest to a public or private entity involved with the management, protection, conservation, or restoration of coastal or ocean resources; and
- Promote or be of discernible benefit to current or future generations.

Proposals from non-academic research institutions are welcome, and collaborative efforts are preferred. In general, research projects should pertain to the following categories listed in the IRO:

1. Fisheries and Aquaculture
2. Organisms, Habitats, and Ecosystems
3. Coastal Hazards, Shoreline Processes, and Beaches
4. Water, Air, and Sediment Quality
5. Invasive Species

Applicants are encouraged to review the IRO for additional information on the priority needs within each of these categories. Cross-cutting needs that apply to many or all of the categories include monitoring programs, social and economic data, technology and engineering for sustainable coastal industries, and climate change.

## **Review Process**

Proposals will undergo the same review process as all other Sea Grant proposal submissions, including review by the Resources Agency Sea Grant Advisory Panel (RASGAP), which will review proposals for OPC priorities. The OPC will have staff involved in all stages of the review process, including the technical review and final decision-making. Concurrence on the selected research projects will be required from the OPC before funds are awarded.