

## COASTAL CONSERVANCY

Staff Recommendation  
January 18, 2006

### **SAN DIEGO SEA URCHIN FISHERY PROJECT: A Model for Community Involvement in Science-based Management and Value-added Marketing**

File No. 06-084  
Project Manager: Rebecca Pollock

**RECOMMENDED ACTION:** Consideration and possible Conservancy authorization to disburse up to \$114,120 of tideland oil revenues authorized by the California Ocean Protection Council to the San Diego Watermen's Association to collect and synthesize scientific data on the San Diego sea urchin fishery, in order to promote stewardship by the San Diego sea urchin fishing community, and move the fishery toward long-term conservation and sustainability.

**LOCATION:** San Diego Bay, southern California

**PROGRAM CATEGORY:** Integrated Coastal and Marine Resources Protection/ Ocean Protection Council

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#### **EXHIBITS**

Exhibit 1: Report on the sea urchin stock assessment workshop, July 14-15, 2006

Exhibit 2: Letters of support to the Ocean Protection Council

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#### **RESOLUTION AND FINDINGS:**

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31000 *et seq.* of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the disbursement of up to \$114,120 from funds provided by the Resources Agency for ocean protection purposes to the San Diego Watermen's Association to collect and synthesize scientific data on the San Diego Sea Urchin Fishery Project, as authorized by the California Ocean Protection Council and described in the accompanying staff recommendation, in order to promote stewardship by the San Diego sea urchin fishing community, and move the fishery toward long-term conservation and sustainability. Prior to the disbursement of these funds, the Executive Officer of the Conservancy shall review and approve a work program, budget and schedule for the project.”

Staff further recommends that the Conservancy adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed project is consistent with the purposes and criteria set forth in Chapter 3 (Section 31111) and Chapter 5.5 (Section 31220) of Division 21 of the Public Resources Code, regarding the protection and restoration of coastal, ocean and marine resources, and authorizing funding of plans and feasibility studies for these purposes.
  2. The proposed project is consistent with the Project Selection Criteria and Guidelines adopted by the Conservancy on January 24, 2001.”
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## **PROJECT SUMMARY:**

### **Background**

Staff is recommending that the Conservancy authorize disbursement of up to \$114,120 to the San Diego Watermen’s Association (SDWA) to develop the San Diego Sea Urchin Fishery Project, consisting of:

- Collecting, sharing, and managing essential scientific data with academic collaborators on the San Diego area sea urchin population
- Conducting a local sea urchin stock assessment
- Coordinating an independent group of knowledgeable fishery scientists, familiar with stock assessments for benthic invertebrates, to conduct a peer review of the assessment
- Preparing provisions for a sea urchin fishery management plan (FMP) by holding facilitated meetings with divers, processors, scientists, and resource managers regarding the San Diego area in order to develop a mutually agreeable set of management proposals
- Conducting experiments for product enhancement, distribution, and marketing for the San Diego region of the fishery
- Working with a financial modeler or other appropriate collaborator to run conceptual business plans using the information gained from data collection and experiments
- Developing a report on project methodology and findings to distribute for use as a template for future projects

The San Diego Sea Urchin Fishery Project aims to move the sea urchin fishery in the San Diego area toward long-term conservation and sustainability. The proposed project will transform the sea urchin fishery in the San Diego area from a data-poor status to one based on good fishery-dependent and independent scientific data and models. In addition to focusing on high-quality collaborative research between fishery scientists and the fishing community, the project seeks to impart an understanding of the benefits of resource stewardship and information sharing by sea urchin fishermen. Further, the project aims to shift the local sea urchin market to a value-based system that benefits fishermen and the consumer. These efforts are required for developing responsible harvesting practices, collecting and distributing a high value product, and perpetuating local-level stewardship of the sea urchin fishery.

Today, San Diego sea urchin fishermen primarily serve a local market; most of the catch is shipped to domestic restaurants and local vendors. Serving this market requires a steady supply of high quality sea urchin product, called uni. The proposed project will use San Diego's Point Loma kelp bed sea urchin fishery to create a replicable model for managing the sea urchin fishery elsewhere in the state. Sea urchin harvesting from the Point Loma kelp bed alone accounts for 50% of the San Diego fishery. There are 50 other kelp beds in Southern California, and the findings from Point Loma may be transferred to these areas.

### **Project Implementation**

Activities by the sea urchin fishing community in San Diego to prepare for this proposal were supported by several foundations and nonprofit organizations across the country. There are three essential components to the project, outlined below. Each is requisite to creating a data-rich fishery, a sustainable fishing community, and value-driven market.

#### ***1) Governance Reform: Moving towards Community-based Management***

The goal of governance reform is to develop a system of local governance under guidelines determined by the community and authorized by the state. This co-management system will be developed through the sharing of information and collaborative decision-making based on an accurate determination of the status of the fishery.

There are a number of institutional changes that would move the fishery from a competitive fishery (where it is not in an individual divers' interest to leave urchins behind to increase their uni content) to a non-competitive fishery, where yields and quality could be increased. After a stock assessment is conducted, harvest strategies that maximize quality can be developed collaboratively. In order to complete the stock assessment, however, fishermen must begin to collect and share accurate data about the areas they fish. Sharing information is difficult in a management regime that fosters competition and discourages cooperation. The SDWA intends to demonstrate the value of sharing data in an otherwise competitive commercial environment.

To complete this portion of the project, SDWA will demonstrate to fishermen how to collect data and explain the importance of sharing the information they gather; investigate a certification process to encourage new divers to participate in the data collection program; and develop a system of decision-making centered on "cooperative conservation" in which fishermen jointly decide to cease harvesting until urchins are high quality. This initiative has already gained some measure of support within San Diego sea urchin fleet, but requires additional education, outreach, and coordination to succeed. The incentive for fishermen is that they can benefit from improving quality and, therefore, price.

#### ***2) Collaborative Research: Data Collection and Stock Assessment***

The purpose of collaborative research is to establish data-driven management of the San Diego sub-population of sea urchins. To do so, SDWA will increase participation in a data collection program approved by the Department of Fish and Game (that is, recruit and train fishermen to collect and share essential data, as described under governance reform above), improve data storage and management systems, and complete a preliminary stock assessment. Completing a localized sea urchin stock assessment will allow for proactive management, as well as modeling

of potential ecological problems by considering factors that may affect abundance, age distribution, and the impacts of the urchin fishery. The project's scientific collaborators will model alternative harvest strategies in order to obtain optimum use of the sea urchin resource.

Working with fisheries scientists at the University of California Santa Barbara (UCSB) and University of Washington (UW), sea urchin fishermen recruited and trained by SDWA will collect data inside and outside of fishing grounds by diving and remote operated vehicle (ROV) surveys. The data collection system previously created for sea urchin fishermen will be improved and expanded to include the entire area off San Diego County, and a system of managing and sharing the data will be developed. With the data collected, a local stock assessment will be completed that focuses on the sea urchin fishery at the Pt. Loma kelp bed offshore from San Diego. This assessment will provide the scientific guidance necessary to determine if the catches from the fishery should be reduced or could be increased. This will allow comparison of alternative harvest strategies to optimize use of the sea urchin resource.

### ***3) Improved Business Conditions: Experiments for Quality***

The purpose of this component of the project is to develop new products and improve the quality and distribution of the product to the consumer. Working with academic partners, SDWA will map quality distribution spatially and temporally with geographic information systems (GIS), with sub-samples obtained at discrete locations. Replicable translocation experiments will be conducted to determine if moving adult red sea urchins may serve as a catalyst to revitalize populations where either recruitment or development of quality uni has been impeded.

SDWA will also explore methods of transporting and storing live sea urchins after harvest that maintain quality. This is necessary because the direct marketing of live sea urchins has been impeded by problems with consistent quality and delivery of small quantities. In order to develop a steady supply of small individual quantities, natural harvests need to be augmented during periods of inclement weather. To this end, SDWA will design and test several models of cages to temporarily store sea urchins after harvest, in order to augment quality while minimizing mortality, and to deliver a product during periods when sea urchin harvests are interrupted.

Once quality, freshness, and delivery have become reliable, SDWA will begin outreach and education efforts aimed at the service sector. Finally, as a result of the information synthesized from the components of the proposed project outlined above, a business plan will be generated. Development of the business plan will be separate from, and dependent on, completion of the proposed project.

Overall, the end benefits of the proposed project will be:

- Improved communication and cooperation with the Department of Fish and Game (DFG)
- Capacity and stewardship in the sea urchin fishing community
- Improved data collection and management systems for the fishery, which can be shared statewide
- Adaptive management using an accurate and data-rich stock assessment
- Conservation of the resource through diversification of fishing effort
- Improved market value for fishermen

- Increased availability of good quality, local sea urchins to consumers
- Ability of fishermen to plan for their futures

### **Significance to Existing State Efforts**

The status of the San Diego sea urchin fishery provides an opportunity to implement the fishery reforms articulated in the Ocean Protection Council's Five-year Strategic Plan. The strong communication skills of the fishery's leadership, the fishery's track record of proactive conservation and management, and the successful outcomes anticipated ensure that the project will not be an isolated success for a localized fishery but instead will be a replicable model with implications for the entire state.

The proposed project will support implementation of the Marine Life Management Act (MLMA) and help to fulfill the mandate of the California Ocean Protection Act (COPA) to support innovative approaches to sustainable fisheries management. The MLMA FMP Master Plan identified the sea urchin fishery as one of the three highest priority fisheries in need of a management plan. Described in terms defined in the MLMA, the sea urchin fishery is currently data poor. To appropriately manage the fishery at the community level, basic information is needed: namely, estimates of current population size, current exploitation rate, and recruitment. Obtaining this data requires proper monitoring and assessment, and the expertise to evaluate alternative harvest strategies.

To date, funding for data collection and science-based management of California's fisheries has been scarce. The project can add value to existing sea urchin fishery management efforts and help to implement the MLMA by supporting fishermen-led data collection and collaborative research with fisheries scientists to produce accurate and valuable stock assessments, and by supporting the development and realization of an innovative approach for area-based management.

### **San Diego Watermen's Association**

The San Diego Watermen's Association (SDWA) is the first fishery harvesting cooperative in California. SDWA is well-organized, includes the area's leading commercial sea urchin divers, and has a strong leadership voice. It was incorporated as a not-for-profit fishery cooperative under section 501(c)(5) of the U.S. Internal Revenue Code, specifically to carry out progressive, proactive fishery research and management. The purpose of SDWA is to empower San Diego divers to:

- Administer grant funds
- Develop a local infrastructure for decision making
- Develop community-based goals
- Collect and manage fishery dependent and fishery independent data
- Participate in fishery management
- Develop flexible fishery tactics and diversify their activities

SDWA has sufficient infrastructure in place to administer funds and programmatic activities, and has a track record of proactive research and management. The cooperative's goals have been supported for several years by various foundations and nonprofit organizations.

### **Project History**

By supporting the project, the Conservancy and Ocean Protection Council would be joining a successful partnership of groups across the country that agree the San Diego sea urchin fishery is worthy of investment. Over the last two years, The Nature Conservancy and the Sand County Foundation funded the first phase of the sea urchin fishery's program to pursue co-management, and the Alex C. Walker Foundation supported a study to evaluate the economic and conservation benefits of allocating area- and species-specific harvest rights. Commonweal Foundation funded travel expenses to an international workshop in Chile for SDWA directors to learn about successful international approaches in management of benthic invertebrates. The California Sea Grant Program funded a part of the project titled "Elements of Quantitative Stock Assessment for Evaluating Alternative Management Strategies."

In the last two months, SDWA organized a workshop with funding from Environmental Defense to review data available for sea urchin stock assessments and to review objectives of a management plan and alternative harvest strategies. The report resulting from the workshop is attached as Exhibit 1. In addition, with supplemental funding from the Walker Foundation and the Sand County Foundation, a dockside meeting was held with San Diego sea urchin divers, lobster fishermen, and others to discuss their visions for improving the conservation, productivity, and profitability of the San Diego nearshore fisheries. These efforts prepared SDWA to request council funds for the final stage of the San Diego Sea Urchin Project.

Support of the funders involved to date will continue. In particular, additional funding is anticipated to supplement the deep water remotely operated vehicle (ROV) exploration and the software development and GIS elements.

### **PROJECT FINANCING:**

Coastal Conservancy (Ocean Protection Council tidelands oil revenues)	\$114,120
<b>Total Project Cost</b>	<b>\$114,120</b>

Staff recommends the Conservancy approve the use of up to \$114,120 of the Ocean Protection Council's tidelands oil funds, appropriated to the Secretary of Resources in the FY 04/05 for projects authorized pursuant to the California Ocean Protection Act. The Resources Agency has entered into an interagency agreement with the Coastal Conservancy to administer these funds on behalf of the Council and recommend projects for funding.

At its November 28, 2006 meeting, the Ocean Protection Council found the project to be a high priority and authorized the grant of \$114,120 to SDWA for this purpose pursuant to provisions of the California Ocean Protection Act (COPA). The grant would be made pursuant to the Conservancy's authority under Division 21 of the Public Resources Code to award grants for living marine resources protection and restoration projects and activities consistent with Division 26.5 (COPA). It is anticipated that council funds may be complemented by mini-grants as needed from The Nature Conservancy, Sand County Foundation, The Walker Foundation, Commonweal, and/or the California Sea Grant Program.

**CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:**

This project would be undertaken pursuant to Sections 31111 and 31220 (Chapters 3 and 6 of Division 21) of the Public Resources Code. Section 31220 authorizes the Conservancy to carry out projects or award grants to protect and/or restore marine habitat and promote integrated coastal and marine resources protection, and section 31111 authorizes the Conservancy to fund plans and feasibility studies for these purposes. Under Section 31220 of the Public Resources Code, the Conservancy may undertake projects that meet any of the objectives specified in subsection (b) of that section. Consistent with Section 31220(b)(7), the proposed project will serve as a necessary step to reduce the impact of population and economic pressures on coastal and marine resources, by promoting a transition to fishing practices that have lesser impact on the marine environment and furthering the transition to more sustainable fishing practices.

Consistent with Section 31220(b)(10), the recommended action also provides for projects and activities consistent with the California Ocean Protection Act (COPA), Division 26.5 of the Public Resources Code. Specifically, Section 35650 of COPA authorizes grants to public agencies, nonprofit organizations and private entities for projects and activities that eliminate or reduce threats to coastal and ocean ecosystems, habitats, and species; foster sustainable fisheries through collaborative research and demonstration projects between persons who fish commercially and scientists and promotion of value-added wild fisheries to offset economic losses attributable to reduced fishing opportunities; and provide monitoring and scientific data to improve state efforts to protect and conserve ocean resources.

At its November 28, 2006 meeting, the Ocean Protection Council found the project to be of high priority for ocean conservation, and determined that a grant of funds to SWDA, a private nonprofit organization organized under section 501(c)(5) of the U.S. Internal Revenue Code, would be consistent with the public purposes of the COPA under sections 35510 and 35515. Pursuant to section 35650, ocean protection funds may be used for grants to private entities, when authorized by the council, only for projects or activities that further these public purposes. Section 35510(b) establishes the principle that state decisions affecting coastal waters and the ocean environment should be designed and implemented to conserve the health and diversity of ocean life and ecosystems, and allow and encourage those activities and uses that are sustainable; sets the goal of improving monitoring and data gathering, and advancing scientific understanding, to continually improve efforts to protect, conserve, restore and manage coastal waters and ocean ecosystems; provides that state and local actions that affect ocean waters or ocean resources should be conducted in a manner consistent with protection, conservation and maintenance of healthy ocean ecosystems; and makes improving the health of fish in coastal waters a priority for the state.

In section 35515, the legislature declared that a primary purpose of COPA is to use California's private and charitable resources more effectively in developing ocean protection and conservation strategies. Because the Ocean Protection Council has authorized the project and made these findings, it is clearly consistent with COPA and thus meets the requirements of section 31220(b)(10).

As required by Section 31220(c), the project will include an evaluation component. It is also consistent with applicable water quality control plans, as described below.

**CONSISTENCY WITH CONSERVANCY'S  
STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):**

The Coastal Conservancy's Strategic Plan was last updated in 2003. Since that time the Legislature has expanded the Conservancy's role in the protection and restoration of ocean resources through the passage of the Ocean Protection Act (SB 1319) and amendments to the Conservancy's enabling legislation (SB 1110). These changes are not fully reflected in the Conservancy's goals contained in the Strategic Plan. Nonetheless, the proposed project will help to further many of the Conservancy's existing goals related to habitat protection, particularly for coastal and marine resources. The project's activities support enhanced ecosystem-based management and sustainable fisheries. In particular, the project supports Public Access Goal 3 of the Conservancy's Strategic Plan, to restore coastal waterfronts; specifically, Objective B: "projects that support commercial fishing, ports, harbors, and other coastal dependent uses." The Strategic Plan calls for notable improvements in the economic stability of the commercial fishing industry and increased vitality of coastal dependent industry through resolution of conflicts. Consistent with Goal 6, Objective B, the proposed project will benefit coastal marine resources through activities that will promote a transition to more sustainable fisheries practices.

The proposed project is also consistent with Section II-E of the Ocean Protection Council's Five-year Strategic Plan. In particular, the project addresses Objective 2, Marine Life Management Act (MLMA): "help establish ecologically and economically sustainable fisheries," and Objective 4, Market-based Fisheries: "support market-based fishery management approaches."

**CONSISTENCY WITH CONSERVANCY'S  
PROJECT SELECTION CRITERIA & GUIDELINES:**

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines adopted January 24, 2001, in the following respects:

**Required Criteria**

1. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
2. **Consistency with purposes of the funding source:** See the "Project Financing" section above.
3. **Support of the public:** Letters of support provided to the Ocean Protection Council are attached as Exhibit 2. The project is supported by various foundations and nonprofit organizations across the country, including the Sand County Foundation, Alex C. Walker Foundation, Commonweal Foundation, Environmental Defense, and The Nature Conservancy, as well as the California Sea Grant Program and the Department of Fish and Game. It also has the support of the Pacific Coast Federation of Fishermen Association (PCFFA).
4. **Location:** The proposed project would be located within the coastal zone of San Diego.

5. **Need:** The proposed project is appropriate for expenditure of the requested funds, and there are no other funding sources available.
6. **Greater-than-local interest:** The project will be used as a model for replication in other parts of the sea urchin fishery and other fisheries statewide. This includes the methods for data collection, management, and sharing, the process for achieving reform, and the lessons learned from market-based solutions with scientific and community support.

### **Additional Criteria**

7. **Urgency:** The project addresses one of the top three priority fisheries listed in the MLMA FMP Master Plan. The project's stakeholders are poised to move forward. Previous steps made by the potential grantee were supported by other funders and have culminated in the present stage, priming the project for Conservancy and Ocean Protection Council support.
8. **Resolution of more than one issue:** The project focuses on a particular fishery in southern California, but it addresses the council's priority of supporting collaborative research between fishermen and scientists, as well as the necessities of improved and increased data collection, the sharing of information among fishermen and between fishermen and resource managers, and community-supported, market-based solutions for long-term sustainability.
9. **Leverage:** See the "Project Financing" section above.
10. **Conflict resolution:** The project is designed to mediate potential conflict among fishermen, between fishermen and processors, and between SDWA and resource managers. The project includes extensive communication, transparency, and opportunities for participation.
11. **Innovation:** The project involves innovative approaches to fishery management and a new strategy for a community-based, market-focused fishery.
12. **Readiness:** SDWA anticipates completing the project within twelve months of project approval by the council and entering a grant agreement with the Conservancy. The grantee is poised to begin work, and has recently conducted preparatory activities to amp up various elements of the project.
13. **Cooperation:** The project is led by a community cooperative working in cooperation with two universities, various nonprofits, and appropriate state partners.

### **CONSISTENCY WITH LOCAL WATERSHED MANAGEMENT PLAN/STATE WATER QUALITY CONTROL PLAN:**

The purpose of local coastal watershed management plans is to prevent water quality degradation and to protect the beneficial uses of coastal waters. Water quality control plans adopted by the State Water Resources Control Board are designed to focus resources on key issues, promote the use of sound science, and promulgate cooperative, collaborative efforts in coastal areas to protect and enhance coastal waters. As a project that includes coastal waters of California, the proposed activities will promote more sustainable use of coastal resources and fisheries. For the same reasons, the proposed project is also consistent with the policies of the 2001 California Ocean Plan that states "the beneficial uses of the ocean waters of the State that shall be protected include...water contact and non-contact recreation; aesthetic enjoyment; commercial and sport fishing; ...preservation and enhancement of designated Areas of Special Biological Significance

(ASBS); rare and endangered species; marine habitat; (and) fish migration.”

**COMPLIANCE WITH CEQA:**

Preparation of the project involves only data gathering, planning, and feasibility analyses for possible future actions and is thus statutorily exempt from the provisions of the California Environmental Quality Act (CEQA) under 14 Cal. Code of Regulations Section 15262. Staff will file a Notice of Exemption upon approval by the Conservancy.