

COASTAL CONSERVANCY

Staff Recommendation
February 3, 2005

CALIFORNIA COASTAL AND MARINE MAPPING INITIATIVE

File No. 05-102
Project Manager: Marina Cazorla

RECOMMENDED ACTION: Authorization to disburse up to \$1,200,000 to the Monterey Bay Sanctuary Foundation for the California Coastal and Marine Mapping Initiative project, to fund data acquisition for near- and offshore substrate and marine habitat mapping along the northern Central California Coast.

LOCATION: Central Coast, in state waters

PROGRAM CATEGORY: Ocean Protection Council

EXHIBITS

Exhibit 1: 2000 California Marine Habitat Task Force report

Exhibit 2: 2005 Coastal and Marine Mapping Workshop report (draft)

Exhibit 3: Letters of Support

RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Section 31220 *et seq.* of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes disbursement of an amount not to exceed one million two hundred thousand dollars (\$1,200,000) to the Monterey Bay Sanctuary Foundation, to fund data acquisition for near- and offshore substrate and marine habitat mapping along the northern Central California Coast, subject to the condition that prior to disbursement of Conservancy funds, the Monterey Bay Sanctuary Foundation shall submit for the review and written approval of the Executive Officer of the Conservancy a project work program, budget and timeline, and the names of any contractors and subcontractors to be retained to carry out the project work.”

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 Chapter 5.5 of Division 21 of the Public Resources Code (Section 31220) regarding integrated coastal and marine resource protection.
 2. The proposed project is consistent with the Project Selection Criteria and Guidelines adopted by the Conservancy on January 24, 2001.
 3. The Monterey Bay Sanctuary Foundation is a private nonprofit organization existing under Section 501(c)(3) of the United States Internal Revenue Code, whose purposes are consistent with Division 21 of the California Public Resources Code.
-

PROJECT SUMMARY:

Staff recommends that the Conservancy authorize a pilot initiative for mapping the state's coastal seafloor through a grant of \$1,200,000 to the Monterey Bay Sanctuary Foundation (MBSF) to undertake a collaborative data acquisition effort for the northern Central Coast between Moss Landing and Bodega Bay. The proposed project was presented to California Ocean Protection Council on January 13, 2006 at its meeting in Santa Barbara, and the Council determined that it is a high-priority project. The proposed grant to MBSF would fund the collection of new data using various geo-referenced mapping technologies as appropriate, including side-scan sonar, multi-beam, and light detection and ranging (LiDAR). The collaborative effort will deliver processed data and map products for data users and resource managers. \$100,000 of the total grant will be applied to acquisition of mapping equipment.

Background

The California Ocean Protection Act (Public Resources Code Sections 35500, et seq.) and subsequent adopted documents of the Ocean Protection Council emphasize that it is state policy to implement ecosystem-based approaches to manage coastal and marine resources using sound science. Implementation of ecosystem-based management strategies requires consideration of interactions between species, their habitats, and human activities. Many of these interactions are not well understood, and significant data and information gaps hinder achievement of effective ecosystem-based management. Statewide, California's resource managers and scientists must often make decisions based on a patchy picture of the habitats that lie offshore.

Accurate statewide mapping of seafloor substrate, marine habitat types, and bathymetry (underwater topography) of California's coastal and nearshore waters is a crucial component necessary to guide multiple ocean management decisions. Designating marine reserves, understanding sediment transport systems, ensuring shipping safety, identifying dredging and dumping sites, regulation of offshore coastal development, and illuminating the dynamics of fisheries and other marine species, are just a few of the applications that would benefit from coastal and marine mapping data and products. Although small sections of the coast, including some adjacent federal waters, have been mapped to varying extents and resolutions, a comprehensive and seamless map of the state's near- and offshore benthic and marine resources does not currently exist.

Past Mapping Efforts at the State Level

Previous mapping planning and prioritization efforts at the state level exemplify the importance and timeliness of a marine mapping initiative supported by the Ocean Protection Council. In 2000, the California Marine Habitat Task Force, led by the Department of Fish and Game and coordinated by the California State University Monterey Bay (CSUMB) Seafloor Mapping Lab, convened a workshop to share existing data and prioritize areas for mapping along the state's coast based on common needs of stakeholders (Exhibit 1). Additional mapping according to the Task Force's 2000 priorities has since been completed, but significant stretches of the coast remain unmapped.

In October 2005, members of the benthic habitat mapping community, including coastal and marine geologists, seafloor mapping experts, resource managers, and end users of the maps and data, held an initial meeting for a Consortium for Coastal Geologic and Benthic Habitat Mapping. The group's objectives are to organize a public forum on current mapping efforts, needs, and data gaps; to identify multi-institutional and multi-disciplinary mapping priorities and funding sources; to generate and publish geologic and habitat maps online; and to participate in the creation of data standards for data acquisition, analysis, and display. This group, coordinated by Guy Cochrane at the U.S. Geological Survey and Gary Green of Moss Landing Marine Laboratory, and other institutions across the state, identified the need to pursue a comprehensive, high quality, collaborative statewide mapping effort.

Leveraging Federal Funds

In addition to this momentum to map the substrates and benthic habitats in state waters, three of the four California National Marine Sanctuaries (part of the National Oceanic and Atmospheric Administration's National Marine Sanctuary Program) recently identified benthic and seafloor mapping as a top priority in their Draft Management Plans. The Channel Islands National Marine Sanctuary (NMS), Cordell Bank NMS, and the Monterey Bay NMS, all of which have boundaries extending partially or wholly within state waters, specifically indicated that managing resources and protecting ecosystems required undersea habitat maps.

Mapping effects have been conducted previously by the Sanctuaries. The Channel Islands NMS in conjunction with the U.S. Geological Survey has conducted ongoing seafloor surveys since 1997 to characterize benthic habitats in and around state and federal waters of the Sanctuary, and a third of this mapping is complete. As of 2003, small sonar mapping efforts were completed in the Gulf of the Farallones NMS and Cordell Bank NMS. These efforts were inventoried in the NMS's 2003 Seafloor Desktop Habitat Study.

NOAA's National Marine Sanctuary Program (NMSP) is acquiring a new research vessel in May 2006, which will be capable of data collection using multibeam, sidescan sonar, and other mapping equipment. NMSP has committed to be a federal partner for this proposed marine mapping initiative, providing use of the new research vessel Fulmar for a significant amount of time during the upcoming field season, as well as staff and crew time. This is a major contribution and partnership for the proposed project, as vessel and equipment rental are among the most costly components of any marine mapping effort.

The California Coastal and Marine Mapping Workshop

The California Coastal and Marine Mapping Workshop was held December 12-13 2005, organized by California State University Monterey Bay's Seafloor Mapping Lab. The Coastal Conservancy funded this workshop using tidelands funds allocated for ocean protection purposes under the authority delegated to the Executive Officer at the Council's October 27, 2005 meeting. The objectives of the Workshop were to (1) update the state mapping priorities defined in 2000 by the California Marine Habitat Task Force based on existing data, data needs, and end-user applications; and (2) draft a strategic plan for statewide coastal and marine mapping that leverages resources of federal and state agencies, academia, and private sector interests.

The workshop convened major stakeholders, scientists, and end-users of mapping products, including academic institutions, management agencies, and other mapping data consumers. By involving these key participants, the resulting draft strategic plan is a transparent and inclusive document that integrates diverse application needs and leverages multiple funding and support sources for a coordinated effort. The Workshop Preliminary Report and Marine Mapping Strategic Plan (Workshop Report and Plan) addresses the following issues:

- Prioritization of areas for new fieldwork and data acquisition efforts statewide, with special emphasis on the northern portion of the Central Coast;
- Collection, management, and storage of both existing and newly acquired data;
- Agreed-upon standards and protocols for data collection, post-processing, and interpretation of data;
- Selection of various mapping products appropriate for resource management applications (e.g., hard copy maps, interactive GIS-based online maps, etc.), and
- Dissemination of mapping data and information to end-users and the public.

One of the primary purposes of the Workshop Report and Plan is to ensure that Ocean Protection Council, state and other funding sources for mapping will be used strategically and efficiently, and that mapping data interpretation and mapping products are useful and relevant to the greatest possible number of resource managers and end-users. A copy of the Workshop Report and Plan was provided to the Ocean Protection Council at the January 13 meeting (Exhibit 2).

Applications of Marine Mapping Data and Products

Coastal and fishery resource managers must frequently make decisions about development projects or uses of the coastal zone without sufficient knowledge of the marine habitat types that the proposed projects impact. Development projects, such as aquaculture, wind farms, pipeline and cable installations, construction of docks, piers, sewage outfalls, and discharge of pollutants (e.g. nutrients and heavy metals), can disrupt and degrade the habitat functions and values of the marine environment. Productive habitats for commercially and ecologically valuable species are located throughout the coastal zone and are potentially impacted by these activities.

Benthic habitat maps are a vital tool to allow managers to visualize the distribution, diversity and extent of marine communities under their jurisdiction. Recent advances in acoustic mapping systems, such as sidescan sonar and multibeam sonar, has made it possible to obtain high-resolution information about the seafloor, and has made benthic mapping feasible for large areas of the seafloor. Benthic habitat maps can be used to aid in siting and reviewing the

environmental impacts of a wide variety of development projects on the seafloor. They can also be used as a planning tool to insure future protection efforts (fishery closures, marine protected areas, ocean use allocation) are habitat based and representative of all regional habitat types. Managers have a critical need to monitor the individual and cumulative impacts of human activity in the marine environment, which will be greatly facilitated when the spatial distribution of various benthic habitat types are known.

Implementation of the Mapping Initiative

The proposed \$1.2 million grant to MBSF will fund the acquisition of new mapping data on the Central Coast through various collection techniques including side-scan sonar, multi-beam, and LiDAR, and serve up processed data and map products for end-user access. Through a Request for Proposals, MBSF in cooperation with the National Marine Sanctuary Program will solicit collaborative, multi-institution proposals to collect, process, and interpret mapping data in the first target area, the exact location of which was determined during the December mapping workshop. The Request for Proposal will also require cash or in-kind matches or contributions from proposers, in order to maximize leverage of this effort. \$100,000 of the total will be applied to mapping equipment acquisition.

The Monterey Bay Sanctuary Foundation

The Monterey Bay Sanctuary Foundation (MBSF) is a 501(c)(3) non-profit organization, whose mission is to advance the understanding and protection of the Monterey Bay National Marine Sanctuary and other coastal and ocean resources in California. MBSF oversees the Sanctuary Integrated Monitoring Network (SIMoN) which monitors and reports on the health of the ocean ecosystem; promotes ocean conservation education for underserved communities; promotes water quality; supports Marine Protected Area efforts; and serves as fiscal sponsor for a variety of federal and state grants and contracts. MBSF is experienced at managing large contracts and grants, and offers a reasonable overhead of 10 percent for administration. MBSF also has excellent knowledge of and familiarity with the staff of California marine sanctuaries and the state’s scientific community. Lastly, MBSF’s science panel for SIMoN provides a pre-existing resource of scientific expertise for review and assessment of proposals and respondents for the proposed mapping block grant, although a new, grant-specific scientific review panel will be appointed by MBSF for proposal review.

PROJECT FINANCING:

Funding Sources:

Ocean Protection Council	\$1,200,000
National Marine Sanctuary Prog. In-Kind Contribution (est.)	<u>\$ 550,000</u>

Total Project Cost **\$1,750,000**

Staff anticipates using \$1,200,000 of the Tidelands Oil funds appropriated to the Secretary of Resources in FY 04/05 for projects authorized pursuant to the Ocean Protection Act. The Resources Agency has entered into an interagency agreement with the Conservancy to administer these funds on behalf of the Council and recommend projects for funding. These funds are to be expended by the Conservancy in concert with the Council for programs and projects that the Council finds to be of high priority. In addition, an unknown but likely

significant contribution of matching funds and/or in-kind resources will come from respondents to the MBSF's request for proposals.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

This project would be undertaken pursuant to Chapter 5.5 (Section 31220) of Division 21 of the Public Resources Code, which allows the Conservancy to carry out projects that protect and/or restore marine habitat and promote integrated coastal and marine resources protection. 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), subsection 5, the proposed project will provide for monitoring and mapping of marine habitat in order to facilitate the protection and enhancement of resources within the coastal zone. In addition, the proposed project is consistent with 31220(b), subsection 10, since it will promote sustainable management of the state ocean resources, a major objective of the California Ocean Protection Act. .

The Department of Fish and Game has been consulted with regard to this project, as required by Section 31220(b)(5). As also required by Section 31220(c), the project is consistent with adopted state and regional watershed planning as described below under "Consistency with Local Watershed Management Plan/State Water Quality Control Plan." Finally, as required by Section 31220(a), Conservancy staff has consulted with the State Water Resources Control Board in the development of this project in order to ensure consistency with the Clean Beaches Program under Chapter 3 Of Division 20.4 of the Public Resources Code.

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

The intent 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 coastal and marine habitat mapping project that includes coastal waters of California, the California Coastal and Marine Mapping Initiative will promote the sustainable use of coastal resources and protection of marine habitat.

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."

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

Consistent with **Goal 6, Objectives A & B**, the proposed project will benefit coastal marine resources through the mapping of coastal and marine substrate and habitat in California's central coast, which will promote sustainable use and management of coastal and marine resources.

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:** The proposed project is supported by the National Marine Sanctuary Program, the California Coastal National Monument, the National MPA Center, the Scripps Institution of Oceanography, Point Reyes National Seashore, Seagrant, the California Department of Fish and Game, and the California Coastal Commission. Letters of support are located in Exhibit 3.
4. **Location:** Statewide, within the coastal zone and state waters off the Central Coast.
5. **Need:** There are currently no other major funders or sources of funding available for this type of planning, nor does the Monterey Bay Sanctuary Foundation have the funding to complete this mapping effort without Conservancy funding.
6. **Greater-than-local interest:** The citizens of California throughout the state will benefit from this project through more informed, sustainable management of coastal and marine resources that will result from mapping of coastal and marine resources.

Additional Criteria

Resolution of more than one issue: Marine substrate and habitat mapping will support a variety of needs: marine protected areas management, fisheries management, offshore development regulation, protection of rare and endangered species, and improved navigation.

Leverage: See the "Project Financing" section above.

Readiness: The Monterey Bay Sanctuary Foundation is ready to prepare and issue a Request for Proposals for marine mapping immediately upon approval of the proposed project.

Innovation: The proposed project will promote technologically innovative mapping techniques.

Cooperation: The proposed project will involve the cooperation of numerous state and federal agencies, academic institutions, and researchers.

COMPLIANCE WITH CEQA:

The proposed project is categorically exempt from review under the California Environmental Quality Act (CEQA), pursuant to 14 Cal. Code of Regulations, Section 15306 (data collection, research and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource). The proposed project will not result in disturbance to the marine environment or its wildlife. Staff will file a Notice of Exemption upon approval.