COASTAL CONSERVANCY

Staff Recommendation
April 24, 2008

SAN FRANCISCO BAY CREOSOTE ASSESSMENT

File No. 08-018
Project Manager: Abe Doherty

RECOMMENDED ACTION: Authorization to disburse up to $165,000 to the San Francisco Estuary Institute to conduct mapping, data collection and prepare a feasibility study of the removal or treatment options for creosote-treated pilings and other structures in San Francisco Bay and to develop recommendations on reducing negative impacts from artificial substrates in San Francisco Bay, to help support the San Francisco Bay Subtidal Habitat Goals Project.

LOCATION: San Francisco Bay (9 counties)

PROGRAM CATEGORY: San Francisco Bay Area Conservancy Program

EXHIBITS

Exhibit 1: Project Location Map

Exhibit 2: Photographs

Exhibit 3: Letters of Support

RESOLUTION AND FINDINGS:

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31161-31165 and 31111 of the Public Resources Code:

"The State Coastal Conservancy ("Conservancy") hereby authorizes the disbursement of up to one hundred sixty-five thousand dollars ($165,000) to the San Francisco Estuary Institute to conduct mapping, data collection and prepare a feasibility study of the removal or treatment options for creosote-treated pilings and other structures in San Francisco Bay and to develop recommendations on reducing negative impacts from artificial substrates in San Francisco Bay. Prior to the disbursement of any of these funds, the San Francisco Estuary Institute shall submit for the review and approval of the Executive Officer of the Conservancy a work program, budget and schedule, and the names and qualifications of any subcontractors that it intends to employ."

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 Project Selection Criteria and Guidelines, last updated by the Conservancy on September 20, 2007.
2. The proposed authorization is consistent with Chapter 4.5 of Division 21 of the Public Resources Code, regarding the Conservancy's resource goals in the San Francisco Bay Area.
3. The San Francisco Estuary Institute is a nonprofit organization existing under Section 501(c)(3) of the U.S. Internal Revenue Code, and whose purposes are consistent with Division 21 of the California Public Resources Code."

PROJECT SUMMARY:

This proposed authorization of $165,000 to the San Francisco Estuary Institute ("SFEI") will enable this nonprofit organization to prepare a feasibility study of the removal or treatment options for creosote-treated structures in San Francisco Bay. The feasibility study will include mapping, data collection, an identification of priority locations, an evaluation of possible removal and treatment techniques, cost estimates, identification of likely permitting requirements and an historical analysis of the significance of pertinent structures (collectively the "study"). The study is a necessary first step to determine the feasibility of future creosote removal and treatment projects in San Francisco Bay, in which the Conservancy may wish to participate. By laying the groundwork for these removal and treatment projects, the study will also help to secure outside sources of funding to implement these projects, as described below.

Creosote-treated wood has been used in marine and estuarine waters for many years. Creosote is a complex mixture of compounds that act as a preservative and pesticide. Efforts to limit or remove creosote-treated wood from marine waters are underway in many locations within the United States, including in Oregon, Washington, Delaware, New York and New Jersey. In San Francisco Bay, there is a particular concern about the impacts of creosote-treated structures on the herring fish population. Studies have shown that herring spawn on creosote-treated pilings and other structures in San Francisco Bay, resulting in an increase in deformities and a reduction in survival. Dilapidated creosote pilings also pose a navigation hazard and will pose an even greater threat as sea level rises.

The study will include literature review and solicitation of expert opinions on the effects of creosote-treated structures on organisms in the Bay. Since pilings and other structures support perching by birds, the positive functions of the structures will also be evaluated in consideration of the need to replace these functions if the creosote-treated structures are removed. The study will also involve consultations with experts on artificial substrates in San Francisco Bay to develop recommendations on reducing negative impacts from artificial substrates, such as creosote, in San Francisco Bay. These recommendations will be included as part of the San Francisco Bay Subtidal Habitat Goals Project, as described below.

Although creosote-treated pilings and other structures are wide-spread on the shores of San Francisco Bay, there has been no comprehensive mapping effort to document the location of these structures. This study will use high resolution aerial photographs available through Google Earth and Microsoft Virtual Earth spatial software to identify the locations of the structures. A limited amount of field work will be performed to address gaps in the aerial photographs and to augment the aerial photograph analysis. The locations of the creosote-treated structures will be

displayed in a new GIS (geographic information system) data layer and Google Earth file, to show the locations of the creosote-treated structures and provide descriptive information on the individual structures. This methodology may change if improved software or other remote sensing resources become available.

San Francisco Bay's rich maritime history suggests that some of the creosote-treated structures in the Bay may have historical importance that, in some cases, could outweigh the ecological benefits of their removal or replacement. In previous comparable projects where the historical value of creosote-treated pilings was not adequately addressed (e.g., in Puget Sound in Washington), tensions arose between environmental and cultural resource interests. To address this issue and reduce the possibility for conflict, SFEI will investigate the potential historical and/or archaeological value of pilings and other creosote-treated structures around the Bay that have been identified as being most likely to have historical significance. SFEI will convene meetings among qualified specialists to construct a relevant, locally appropriate, and practical set of guidelines to identify pilings where the historical/cultural benefits of preserving the pilings may likely outweigh the benefits of removal and recommend alternative treatment options.

In situ encapsulation techniques may provide the most cost-effective means of isolating some creosote-treated structures from marine organisms, particularly for areas in which there are historic interests or where the structures are known to be valuable perching habitat for birds. The study will evaluate both in situ encapsulation and removal techniques and develop cost estimates for implementing various techniques. This analysis will be completed through literature reviews, studies from creosote removal and treatment projects in other states, and discussions with regional port authorities and private marine terminals, public agencies, marine engineering consultants and contractors. The study will also consider both currently available and new/emerging technology, equipment, methods, and costs. In particular, SFEI will coordinate with the National Oceanic and Atmospheric Administration (NOAA) staff, who have been active in studying the effects of creosote-treated structures in San Francisco Bay and have been involved in pilot projects to remove derelict creosote-treated structures. The water quality impacts of derelict creosote-treated structures in San Francisco Bay have been documented by NOAA Fisheries, which has also been a leader in advancing planning work on the removal of these structures in the Bay. NOAA Fisheries contracted with Stratus Consulting to conduct an independent, third party review of treated wood utilization in aquatic environments, which resulted in the release in December 2006 of a report titled "Creosote-Treated Wood in Aquatic Environments: Technical Review and Use Recommendations."

The study will identify potential cooperative and/or cost sharing opportunities with regional marine facilities and ports that could combine creosote piling removal projects with current or future structural maintenance and improvement projects. The project will also include consultation with the U.S. Army Corps of Engineers, the San Francisco Bay Conservation and Development Commission ("BCDC") and other agencies to determine if historic or currently active permits contain conditions requiring removal or other action due to non-use or abandonment of permitted facilities. This effort is important to identify the potential for cost sharing or cost recovery from the owners of the structures.

This study will also provide planning necessary for restoration projects that will assist San Francisco Bay resources that were affected by the recent Cosco Busan oil spill. The state and federal trustee agencies are beginning to develop a Damage Assessment Restoration Plan

("DARP") to select and implement restoration projects that will address impacts from the oil spill and these agencies are currently soliciting ideas for restoration projects that are best suited to address damage to injured wildlife and habitats. Conservancy staff has provided a list of recommended restoration projects to the trustee agencies, and one of the recommended projects is removal or remediation of creosote-treated structures in the Bay to address damage to herring habitat. Therefore, it is urgent that this study be completed soon because little is known about the priority locations of structures, or the techniques, costs, permitting and regulatory requirements that will be required to implement the removal or treatment of the creosote-treated structures. It is hoped that this study will help secure funding for creosote removal and treatment projects as part of the DARP. Conservancy staff and SFEI will coordinate closely with the state and federal trustee agencies to ensure that the study provides information that will assist the trustee agencies in consideration of inclusion of these projects as part of the DARP.

This study also helps to implement the San Francisco Bay Subtidal Habitat Goals Project ("Subtidal Goals Project"), which is a coordinated effort to establish a comprehensive and long-term vision for research, restoration and management of the subtidal (submerged) habitats of San Francisco Bay. The Subtidal Goals Project involves an interagency collaboration between the Conservancy, BCDC, NOAA and the San Francisco Estuary Project. One recommendation of the science committee for the Subtidal Goals Project is to decrease the amount of artificial substrates in the Bay, and it is anticipated that one of the major restoration recommendations will be to remove or encapsulate creosote-treated structures in the Bay, especially those that are abandoned and those that are within the areas where herring typically spawn. The creosote study will address these recommendations by providing planning for the removal or treatment of creosote-treated structures. SFEI will also convene a group of experts on artificial substrates in San Francisco Bay, in order to make recommendations on other ways to reduce the amount of artificial substrates in San Francisco Bay that are likely causing negative impacts on bay organisms.

SFEI is a nonprofit research institute whose mission is to foster the development of the scientific understanding needed to protect and enhance the San Francisco Estuary. It is governed by a Board of Directors composed of Bay Area scientists, environmentalists, regulators, and representatives from local governments and industries. The project team includes scientists with training and experience in herring in San Francisco Bay, toxicology, marine and estuarine contaminants, historical ecology, GIS, and restoration planning and design. This combination of expertise is ideal for the inter-disciplinary assessment of removal and treatment of creosote-treated pilings and structures in San Francisco Bay.

Site Description:

San Francisco Bay is the largest estuary on the West Coast of North American and the Bay Area is home to over 7 million people living in 101 cities in nine counties. San Francisco Bay is a designated NOAA National Estuarine Research Reserve and National Estuary Program site, a Habitat Area of Particular Concern and contains several State Ecological Reserves as well as the first urban National Wildlife Refuge in the United States. It provides habitat for approximately 23 endangered species and 105 threatened species.

The scope of this study is the subtidal regions of San Francisco Bay, from Land's End (to the west of the Golden Gate Bridge), east to Brown's Island near Antioch and south to Calaveras Point in South San Francisco Bay. The study does not include mapping of structures within tidal channels or sloughs, such as the Napa River or the Oakland shipping channel. In many regions of San Francisco Bay, there are pilings and structures that were treated with creosote and are likely causing negative impacts to native species, including herring, which spawn in the central portions of San Francisco Bay.

Project History:

This study is part of an ongoing effort by the Conservancy and the California Ocean Protection Council ("OPC") to promote long-term management and restoration of subtidal habitat in the San Francisco Bay through the Subtidal Goals Project. In January 2006, the OPC designated the Subtidal Goals Project as a high priority for ocean conservation and authorized the disbursement of up to $125,000 to study and prepare a report identifying threats to the Bay ecosystem, and develop restoration and research priorities. The science committee of the Subtidal Goals Project has recommended restoration projects to reduce the amount of artificial substrates in the Bay. With the current proposed funding, SFEI will study the feasibility of removing or treating creosote-treated structures and provide recommendations to facilitate the overall reduction of artificial substrates in the Bay. It is intended that these detailed recommendations on artificial substrates will be incorporated into the Subtidal Goals Project.

PROJECT FINANCING:

Coastal Conservancy	$165,000
NOAA (requested)	$36,750
Total Project Cost	**$201,750**

It is anticipated that the Conservancy's funding will come from appropriations for the San Francisco Bay Area Conservancy Program from the "California Clean Water, Clean Air, Safe Neighborhood Parks and Coastal Protection Act of 2002" (Proposition 40). This funding source may be used for the acquisition, development and restoration of land and water resources in accordance with the provisions of the Conservancy's enabling legislation, Division 21 of the Public Resources Code. Use of Proposition 40 funds for this study is consistent with the purpose of this funding source, since the project will support planning and design of habitat restoration and enhancement projects in the nine counties that comprise the San Francisco Bay Area.

NOAA's Restoration Center, working with the NOAA National Ocean Service, Office of Response and Restoration, Assessment and Restoration Division, will provide $36,750 in matching funds, through in-kind services provided by NOAA staff to support the project.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

This project would be undertaken pursuant to Section 31111 and Chapter 4.5, Sections 31160-31165 of the Conservancy's enabling legislation, Division 21 of the Public Resources Code

(regarding resource goals in the San Francisco Bay Area). The project area is the nine counties which make up the jurisdiction of the San Francisco Bay Area Conservancy Program, as described in Section 31162 of the Conservancy's enabling legislation.

Under Section 31162(b), the Conservancy may undertake projects and award grants to achieve the goal of protecting, restoring and enhancing natural habitats. In addition, under Section 31165, the Conservancy may undertake projects and award grants for activities that are compatible with the preservation, restoration, or enhancement of ocean, coastal and bay resources. The recommended grant is consistent with and helps to achieve these goals, by providing design and planning for habitat protection, restoration and enhancement projects involving removal or remediation of creosote-treated wood structures in the Bay.

This project is appropriate for prioritization under the selection criteria set forth in § 31163(c) in that: (1) it is consistent with the San Francisco Bay Plan ("Bay Plan"), as described below; (2) it involves the coordination of several different agencies and many different jurisdictions within the San Francisco Bay Area; (3) it will be implemented in a timely manner as the grantee is ready to begin work and the findings of the feasibility study are needed within a year to support the DARP for the Cosco Busan oil spill and the Subtidal Goals Project; (4) it will provide opportunities to encourage use of mitigation funds to remove or remediate creosote structures that could be lost if the project is not quickly implemented; and (5) the proposal includes matching funds, through in-kind services provided by NOAA staff.

Section 31111 authorizes the Conservancy to award grants to nonprofit organizations to prepare feasibility studies.

CONSISTENCY WITH SAN FRANCISCO BAY PLAN:

The San Francisco Bay Plan ("Bay Plan") was completed and adopted by BCDC in 1968 pursuant to the McAteer-Petris Act of 1965 and last reprinted in January 2007. The Bay Plan guides BCDC's management and permitting decisions in the Bay. The creosote study is consistent with the following policies articulated in Part III, Findings and Policy Section of the Bay Plan:

- Subtidal Areas Policy 5 "The [BCDC] should continue to support and encourage expansion of scientific information on the Bay's subtidal areas, including: (a) inventory and description of the Bay's subtidal areas; (b) the relationship between the Bay's physical regime and biological populations; …(e) where and how restoration should occur." Bay Plan, Subtidal Areas, Policy 5 (adopted April 2002) at p. 28. This study will assist in implementation of this policy, by providing an inventory and report describing the impacts of creosote-treated structures in the Bay, the relationships between the chemicals in creosote to impacts on organisms in the Bay, and priority locations within the Bay for removal or encapsulation of the creosote-treated structures.

- Fish, Other Aquatic Organisms and Wildlife Policy 1: "To assure the benefits of fish, other aquatic organisms and wildlife for future generations, to the greatest extent feasible, the Bay's tidal marshes, tidal flats, and subtidal habitat should be conserved, restored and increased." Bay Plan, Fish Other Aquatic Organisms and Wildlife, Policy 1 (amended

April 2002) at p. 16. The creosote study is consistent with this policy because it will provide planning for subtidal restoration projects in San Francisco Bay.

- Water Quality Policy 1: "Bay water pollution should be prevented to the greatest extent feasible." Bay Plan, Water Quality, Policy 1 (adopted June 2003) at p. 19. The creosote study is consistent with and will assist in implementation of this policy, by providing planning work to reduce water pollution in the Bay through the removal or encapsulation of creosote-treated structures.

CONSISTENCY WITH CONSERVANCY'S 2007 STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):

Consistent with **Goal 9, Objective A** of the Conservancy's 2007 Strategic Plan, the proposed project will help to develop lists of high-priority areas for the Bay Area Program, by supporting the completion of projects that will protect and restore natural habitats.

Consistent with **Goal 10, Objective B**, the proposed project will develop plans for restoration or enhancement of approximately 200 acres of subtidal habitat where there are creosote-treated pilings or other structures.

Consistent with **Goal 14, Objective A**, the proposed project will help to implement the Ocean Protection Council's Strategic Plan for habitat restoration. The feasibility study will aid in the development of plans and help secure funding for projects that will restore valuable ocean and coastal habitats consistent with Goal D, Objective 1 of the OPC Five-Year Strategic Plan adopted in September 2006.

CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA & GUIDELINES:

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on September 20, 2007, 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:** This project is supported by Congressman George Miller, Senator Carole Migden, Assemblywoman Loni Hancock, NOAA Fisheries Restoration Center, BCDC, the San Francisco Bay Region Water Quality Control Board, the San Francisco Estuary Project and Save the Bay. Refer to Exhibit 3 for letters of support for this project.
4. **Location:** This project is located entirely within the nine counties that make up the San Francisco Bay Area, consistent with Section 31162 of the Public Resources Code.
5. **Need:** The proposed project would not occur without Conservancy participation and funding.

6. **Greater-than-local interest:** In creating the San Francisco Bay Area Conservancy Program, the legislature identified San Francisco Bay as the central feature in an interconnected open-space system of watersheds, natural habitats, scenic areas, agricultural lands and regional trails of statewide importance. This project will help guide the design of protection, removal and remeditation projects related to creosote-treated structures in San Francisco Bay and will improve habitat for herring and other wildlife and reduce navigational hazards in the Bay.

Additional Criteria

7. **Urgency:** It is important for this project to be completed as soon as possible, in order for the removal or encapsulation of creosote-treated structures in San Francisco Bay to be eligible for inclusion in the DARP for the recent Cosco Busan Oil Spill. It is also urgent to provide recommendations on artificial substrates in San Francisco Bay so that they can be included as part of the Subtidal Goals Project, which is expected to be completed in the next year.
8. **Resolution of more than one issue:** Removal or remediation of creosote-treated structures will address contaminant impacts on wildlife, support the herring fishery, and reduce navigational hazards which are expected to increase with sea level rise.
9. **Leverage:** See the "Project Financing" section above.
10. **Conflict resolution:** The project will evaluate the historical significance of creosote-treated structures, to address conflicts between cultural and ecological resources and suggesting removal or encapsulation of the structures.
11. **Innovation:** Removal or encapsulation of creosote-treated pilings and other structures is a new type of subtidal habitat restoration and would represent an innovative approach for California.
12. **Readiness:** The grantee is prepared to begin the project immediately after the Conservancy approves work to commence if this grant is approved by the Conservancy Board.
13. **Realization of prior Conservancy goals:** See "Project History" above.
14. **Cooperation:** The project will be implemented in cooperation with many agencies, research institutions and non-profit organizations that are part of the Subtidal Goals Project, described above. The project will also involve input from port authorities and marine construction and design contractors.

COMPLIANCE WITH CEQA:

The proposed project is statutorily exempt from review under the California Environmental Quality Act pursuant to 14 California Code of Regulations Section 15262, in that it would involve only planning studies and feasibility analyses for possible future action not yet adopted by the Conservancy. Preparation of the feasibility study does not legally bind the Conservancy to future implementation of protection, restoration or enhancement projects that are designed using the creosote assessment. The project is also categorically exempt under Section 15306, which exempts basic data collection and resource evaluation activities leading to an action which the Conservancy has not yet approved, adopted, or funded. Upon approval, staff will file a Notice of Exemption for this project.