

COASTAL CONSERVANCY

Staff Recommendation

October 3, 2013

**SAN FRANCISCO BAY CREOSOTE PILING REMOVAL  
AND  
PACIFIC HERRING RESTORATION PROJECT**

Project No.13-028-01

Project Manager: Marilyn Latta

**RECOMMENDED ACTION:** Consideration and possible Conservancy authorization to accept up to \$2,000,000 from the National Fish and Wildlife Foundation and to expend up to \$400,000 of those funds for initial planning, design, permit applications, and environmental compliance documents for the *San Francisco Bay Creosote Piling Removal and Pacific Herring Restoration Project*.

**LOCATION:** One Location within the Nine-County Bay Area (To Be Determined)

**PROGRAM CATEGORY:** Resource Enhancement

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**EXHIBITS**

Exhibit 1: [Regional Map](#)

Exhibit 2: [Map of Creosote Hotspots and Historic Herring Spawning Area](#)

Exhibit 3: [Creosote Piling Photographs](#)

Exhibit 4: [Project Letters](#)

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**RESOLUTION AND FINDINGS:**

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31160-31165 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the acceptance of up to \$2,000,000 (two million dollars) from the National Fish and Wildlife Foundation and the expenditure of up to \$400,000 (four hundred thousand dollars) of those grant funds to conduct initial planning, design, and environmental compliance for a multi-objective creosote piling removal and Pacific herring habitat restoration pilot project in San Francisco Bay.”

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 authorization is consistent with Chapter 4.5 of Division 21 of the Public Resources Code, regarding the resource goals of the San Francisco Bay Area Conservancy Program.
2. The proposed project is consistent with the current Conservancy Project Selection Criteria and Guidelines.”

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## **PROJECT SUMMARY**

Staff recommends that the Conservancy authorize acceptance of \$2,000,000 of funds granted by the National Fish and Wildlife Foundation (NFWF) to the Conservancy, and expenditure of up to \$400,000 of those grant funds to carry out initial planning, design, and environmental compliance activities for the *San Francisco Bay Creosote Piling Removal and Pacific Herring Restoration Project* (the “Project”).

The overarching goal of the Project is to remove derelict creosote pilings that cause marine debris and navigational hazards, while improving spawning habitat availability and habitat quality for Pacific herring and other species in San Francisco Bay. There has long been a serious concern that chemicals leaching from creosote-treated structures harm Pacific herring, which constitute the last commercial fishery of a native species within San Francisco Bay. Because herring spawn on hard surfaces, including piers and pilings, the eggs and larvae are exposed to toxic levels of chemical compounds found in the creosote. In studies by the San Francisco Estuary Institute (SFEI) and the National Oceanic and Atmospheric Administration (NOAA) (see Project History), more than 11,000 derelict pilings are located within critical herring spawning areas. This project will both remove creosote treated pilings and reestablish subtidal habitat, through restoration methods to establish eelgrass, oysters, and other subtidal species. It is anticipated that reestablished eelgrass and oyster beds and the associated substrate will, in turn, provide a superior substrate for the spawning of Pacific herring (*Clupea pallasii*). This collaborative and innovative project will include site(s) selection and project design, permitting, creosote piling removal, native subtidal restoration, pre- and post- construction monitoring, public involvement, as well as outreach to resource agencies and environmental stakeholders.

**Site Description:** The Project will occur at one site within San Francisco Bay; the exact locations of the piling removal/restoration area will be determined through an opportunities and constraints analysis. The Bay is the largest estuary on the west coast but its natural attributes have been drastically altered over the centuries by urban and industrial development along its shores. Commercial and recreational fisheries were once abundant in San Francisco Bay and were even documented by famous writers like Jack London. In the 1800s, the Bay was fished for Pacific herring, sardines, anchovy, salmon, steelhead, Dungeness crab, shrimp, and other species. Currently there are limited commercial fishing seasons for certain runs of salmon and Dungeness crab in marine waters outside the Golden Gate, and for Pacific herring and the [non-native] Striped bass inside the Bay.

The degradation and loss of habitat for these species, as well as native oyster and eelgrass beds, affected the waters and substrate necessary for fish to spawn, breed, feed, and grow; this resulted

in dramatic declines in fish populations and the urgent need for habitat protection and restoration actions to recover these species. Since the Gold Rush, San Francisco Bay has lost more than 90% of historic tidal wetlands and the Bay itself is one third smaller in area due to fill projects along the bay shoreline and in the bay, which, in turn, caused a substantial loss of of subtidal habitat. Along with a decline in surface area, there has been a significant reduction in three-dimensional structure in the bay, which now has a featureless mud bottom in many areas due both to increased siltation and dredging and to removal of existing natural hard substrates. In some cases these rocky features were removed because they represented navigational hazards and in others, the bay was filled in around natural structures. And as is obvious when touring the Bay, a large percentage of the shoreline has also been stabilized with hard structures, such as riprap, breakwaters, seawalls, and bulkheads to create dry lands for development and to prevent erosion. San Francisco Bay now has reduced biomass of wetland vegetation, seagrass, and shellfish beds that once provided habitat, food resources, and specific environmental functions that were critically important to multiple species in the food chain.

Pacific herring attach egg masses to eelgrass and hard structures, including creosote pilings. Eelgrass beds are the historic natural spawning substrate for Pacific herring, providing a cleaner and more natural habitat for herring than the hard structures that exist today in the urbanized estuary. In addition to providing substrate for herring spawning, eelgrass beds (along with rocky intertidal areas, sand beds, and macroalgal beds) provided what is referred to under the Magnuson-Stevens Fishery Conservation and Management Act, as “essential fish habitat” (EFH). These habitats once supported plentiful populations of Pacific herring, as well as various rockfishes (including brown rockfish and lingcod), flatfishes (including California halibut, and speckled sanddab), sharks (including leopard shark and brown smoothhound), northern anchovy, Pacific sardines, Chinook salmon, and other species. Eelgrass is specifically designated as EFH - Habitat Area of Particular Concern for pacific groundfish (80+ species of flatfish, roundfish, sharks, rockfish). Eelgrass beds provide substrate for Pacific herring and other organisms to attach their eggs to and food resources for species such as herring and salmon.

**Project History:** In 2009, the San Francisco Estuary Institute (SFEI), funded in part by the Conservancy, and the National Oceanic and Atmospheric Administration (NOAA) identified and mapped over 33,000 derelict pilings above the surface of the bay at low tide, and estimated at least that many more pilings (and stubs of pilings) occur below the surface of the water at low tide. Nearly all of these wooden pilings were injected with creosote, a by-product of the coal and coke industry used from the mid-1800s into the 1950s to protect marine structures from decay. Creosote is a complex mixture of chemicals, many of which are toxic to fish and other marine organisms, causing impacts such as mutations in developing herring eggs. Because of concerns over toxicity, use of creosote treated pilings was banned in 1993 by the California Department of Fish and Wildlife.

The Project is the result of a multi-agency effort to examine the ecological benefits of artificial structures and subtidal habitats and develop conservation plans and restoration projects to improve these habitats for a variety of species. The Conservancy has been involved in both efforts: the San Francisco Bay Subtidal Habitat Goals Project and the San Francisco Bay Living Shorelines: Near-shore Linkages Pilot Project.

The San Francisco Subtidal Habitat Goals Project was a collaboration between the Conservancy, San Francisco Bay Conservation and Development Commission (BCDC), the National Oceanic and Atmospheric Administration (NOAA), and the San Francisco Estuary Partnership (SFEP) which culminated in the *San Francisco Subtidal Habitat Goals Report (Subtidal Goals Report), 2010*. The *Subtidal Goals Report* is a 50-year conservation plan for how to move forward with science-based research, protection, and restoration of subtidal habitats in the San Francisco Bay. The report states that one long-term strategy for the Central Bay and the Richmond shoreline is to restore subtidal habitats like oyster and eelgrass beds near sites where creosote pilings are being removed, to replace the lost physical structure and provide natural substrate to attract spawning herring.

The Living Shorelines Project is part of a continuing effort by the Conservancy to promote long-term management and restoration of subtidal habitat in the San Francisco Bay. The Living Shorelines Project complements the Subtidal Habitat Goals Project, which recommended using a pilot project approach to remove artificial structures and creosote pilings at targeted sites in combination with restoration of natural habitats that provide environmental benefits with reduced engineering of hard structures (a “living shoreline”). Living Shorelines have been installed in other bays and estuaries on the East and Gulf Coasts but are novel to the Bay Area; this approach makes use of natural bioengineering techniques (such as native oyster reefs and eelgrass plantings) to provide habitat values as well as physical values to buffer shorelines and reduce wave action and erosion.

The planned outcomes of this project will be: 1) improved spawning success of Pacific herring through removal of creosote pilings; 2) improved spawning success of Pacific herring through increasing the availability of native eelgrass, oyster, and other subtidal habitats; 3) sharing of lessons learned to further inform future planning, management, restoration design practices, and permit procedures for creosote piling removal and subtidal habitat restoration projects bay-wide, and 4) increased public involvement by involving volunteers in community-based restoration projects on the adjacent shoreline. These results will be achieved by the: 1) removal of up to approximately 1,200 individual pilings or 180 tons of creosote pilings, 2) establishment of one acre of subtidal habitat, including native eelgrass and oyster beds, and 3) preparation and sharing of a summary of results with resource agency staff and other stakeholders.

## **PROJECT FINANCING**

<u>National Fish and Wildlife Foundation</u>	<u>\$2,000,000</u>
<b>Project Total</b>	<b>\$2,000,000</b>

The anticipated source of Conservancy funds is a grant from NFWF, which will be used to fund the entire Project, including this authorization request to expend up to \$400,000 for initial planning, design, and environmental compliance activities. The NFWF grant is being specifically awarded to the Conservancy to carry out the Project: a five year subtidal habitat and Pacific herring restoration pilot project in the San Francisco Bay involving the removal of derelict creosote pilings and restoration of native eelgrass and oyster habitat for the benefit of Pacific Herring and other aquatic resources,

Of the \$400,000 under the proposed authorization, Conservancy staff anticipates disbursing approximately \$325,000 to an environmental services contractor to assist in the aspects of the initial planning, design and environmental assessment and evaluation that are beyond the capacity of the Conservancy staff to undertake. The additional \$75,000 under the proposed authorization will be used to reimburse the Conservancy for its staff time in undertaking the initial planning, design and environmental compliance activities. Once these first phase activities are completed, Conservancy staff anticipates returning to the Conservancy for future authorization request(s) to expend the balance of the NFWF grant (\$1,600,000) for project implementation, of which \$125,000 is for Conservancy staff support.

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

The Project is consistent with the requirements to Chapter 4.5, Sections 31160-31165, of Division 21 of the Public Resources Code regarding resource goals in the San Francisco Bay Area.

Under Section 31162(b), the Conservancy may undertake projects and award grants in the nine-county San Francisco Bay Area to achieve the goal of protecting, restoring and enhancing natural habitats of regional importance. Consistent with this section, the proposed project consists of work that will result in sound scientific planning and restoration project implementation to help protect, restore and enhance subtidal habitats in an estuary of regional importance within the Bay Area.

Under Section 31163(a), the Conservancy is required to cooperate with the Bay Conservation and Development Commission (BCDC), other regional government bodies, and other interested parties in identifying and adopting long-term resource goals for San Francisco Bay area. This project is part of a program of activities that came about from the collaborative planning of four primary agencies that developed the San Francisco Bay Subtidal Habitat Goals (Conservancy, BCDC, NOAA, and the San Francisco Estuary Partnership).

The proposed project is appropriate for prioritization under the selection criteria set forth in Section 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 environmental solutions across several different agencies and many different jurisdictions within the San Francisco Bay Area; (3) it will be implemented in a timely manner; (4) the availability of National Fish and Wildlife Foundation( NFWF) grant funds to restore subtidal habitat provides an opportunity for restoration activities that could be lost if the Project is not quickly implemented.

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. Acceptance of the recommended grant is consistent with and helps to achieve these goals by providing design, planning, and restoration project implementation for habitat protection, restoration and enhancement projects involving subtidal habitats in the Bay.

**CONSISTENCY WITH CONSERVANCY'S 2013  
STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):**

Consistent with **Goal 11, Objective C**, the Project will develop plans for enhancement of tidal wetlands and subtidal habitat.

Consistent with **Goal 11, Objective D**, the Project will enhance tidal wetlands and subtidal habitat.

Consistent with **Goal 15, Objective A**, the proposed authorization serves to adapt the organizational structure to align staff resources in that the Project will be carried out with a NFWF grant that allows reimbursement of Conservancy staffing costs, and the Project will include significant technical input by Conservancy project managers.

**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 November 10, 2011, 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 Project is supported by the NOAA Fisheries Restoration Center, BCDC, and the San Francisco Estuary Partnership. The Project also has broad public support from non-governmental organizations such as Baykeeper and others. See Exhibit 4 for letters of support for this project.
- 4. Location:** The Project is located entirely within the nine counties that make up the San Francisco Bay Area, and will be carried out within known creosote hotspot locations and within Pacific herring spawning areas within the central portion of the Bay, consistent with Section 31162 of the Public Resources Code.
- 5. Need:** The proposed project would not occur without Conservancy participation and National Fish and Wildlife Foundation 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 develop new approaches to removing creosote pilings from the Bay system and new techniques for restoration of subtidal habitats in San Francisco Bay. The techniques and designs resulting from the Project may have applicability at other sites in San Francisco Bay and in other estuarine systems on the Pacific Coast.
- 7. Sea level rise vulnerability:** This project helps to improve resiliency of natural habitats, which is one of the overarching recommendations in climate change adaptation planning. The

Project itself involves the removal of vulnerable structures and will not result in increased vulnerability to sea level rise.

**Additional Criteria**

- 7. Urgency:** Without Conservancy involvement and NFWF funding, the Project would not occur at this time in San Francisco Bay.
- 8. Resolution of more than one issue:** The Project removes toxic pollutants from the Bay ecosystem, removes navigational hazards, implements subtidal habitat restoration designs, and will result in lessons learned that can be applied to additional sites.
- 9. Leverage:** The NFWF grant will cover Conservancy staff time, maximizing leverage of staff resources with minimal Conservancy fiscal outlay.
- 10. Conflict Resolution:** The Project will involve multiple stakeholders with diverse views, and will focus on a final design that doesn't adversely impact potential positive benefits of piling structures such as bird roosting and areas for people to fish.
- 11. Innovation:** The Project will implement recommendations in the San Francisco Bay Subtidal Habitat Goals Report and continue to build on new, innovative techniques with the San Francisco Bay living Shorelines Project for restoration of subtidal habitats.
- 12. Readiness:** The proposed project is ready to commence upon approval of disbursement of funding by the Conservancy.
- 13. Realization of prior Conservancy goals:** See "Project History" section above.
- 14. Cooperation:** The Project is a collaborative project involving many agencies. The Conservancy is the lead agency, and supporting partners include NFWF, San Francisco Estuary Partnership, CA Department of Fish and Wildlife, BCDC, SFEP, U.S. Environmental Protection Agency, U.S. Coast Guard, San Francisco BayKeeper, and many others.
- 15. Minimization of Greenhouse Gas Emissions** The Project will incorporate measures to minimize emissions throughout implementation of the project. Work will be completed by local staff, contractors, grantees, and community volunteers that live in close proximity to the project locations. Recommended regional construction best management practices will be followed. Materials and equipment used for the project will be purchased by local vendors where feasible. Conservancy staff will explore the potential of burning the removed creosote wood debris in a co-generation plant to produce energy, but this is still under development.

**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 amended in October 2011. The Bay Plan guides BCDC's management and permitting decisions in the Bay. The Project is consistent with the following policies articulated in Part III, Findings and Policy Section of the Bay Plan:

- Subtidal Areas Policy 5 (adopted April 2002): "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.”

The proposed pilot Project will assist in implementation of this policy by providing additional data on best techniques for restoration at a specific site, describe the densities, locations, and species associated with subtidal habitats at that site, and conduct five years of monitoring on herring presence before and after construction.

Fish, Other Aquatic Organisms and Wildlife Policy 1 (amended April 2002): “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.”

The Project is consistent with this policy because it will restore and increase subtidal habitat in San Francisco Bay.

### **COMPLIANCE WITH CEQA:**

This authorization involves only data collection, research, and resource evaluation activities and planning, design, and environmental compliance documentation. Under Section 15262 of the California Environmental Quality Act (CEQA) Guidelines (Cal. Code Regs, Title 14, §§ 15000 et seq.) a project involving only feasibility or planning studies for possible future actions which the agency, board, or commission has not approved, adopted, or funded is statutorily form review under CEQA, provided that, as here, it includes consideration of environmental factors. Likewise, under CEQA Guidelines Section 15306, the proposed authorization is categorically exempt from CEQA review, since it consists of basic data collection, research and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource, which may lead to an action which a public agency has not yet approved, adopted, or funded.

Unless and until the Conservancy does the initial research, planning, and environmental assessment for the Project, a review under CEQA for the future implementation of a pilot project of uncertain nature, methodology, location and scope would be both uninformative and futile. Once these initial steps are taken and prior to any commitment of funding to undertake the implementation phase of the Project, Conservancy staff will return to the Conservancy for approval of Project implementation and for associated and appropriate CEQA review.