



Staff Recommendation
6/19/2020

Coastal Wetlands, Beaches and Watersheds Inventory

Christopher Potter, Program Manager

RECOMMENDED ACTION: Authorization to disburse up to \$275,000 to the San Francisco Estuary Institute to develop a digital inventory of the shallow subtidal, intertidal and inland wetlands; beaches; and watersheds draining directly to the California coast, including the inland Delta of the San Francisco Estuary (see Exhibit A).

LOCATION: Coastwide

STRATEGIC PLAN TARGET(S): 1.1.7: Develop a coastal wetlands inventory to support coastal wetland restoration and preservation. 3.1.3: Develop an action plan for addressing rocky intertidal and beach habitat loss due to sea-level rise by 2023. 3.1.4: Work with partners to preserve existing seagrass beds.

EXHIBITS:

Exhibit A: Project Location and Site Map
Exhibit B: Letters of Support

FINDINGS AND RESOLUTION:

Staff recommends that the Ocean Protection Council (OPC) adopt the following findings:

"Based on the accompanying staff report and attached exhibit(s), OPC hereby finds that:

- 1) The proposed projects are consistent with the purposes of Division 26.5 of the Public Resources Code, the Ocean Protection Act;
- 2) The proposed projects are consistent with OPC's Proposition 84 grant program funding guidelines and environmental license plate funding guidelines (Interim Standards and Protocols, August 2013); and
- 3) The proposed projects are not 'legal projects' that trigger the California Environmental Quality Act (CEQA) pursuant to Public Resources Code section, section 15378."

Staff further recommends that OPC adopt the following resolution pursuant to Sections 35500 *et seq.* of the Public Resources Code:

“OPC hereby approves the disbursement of up to \$275,000 to the San Francisco Estuary Institute to implement the Coastal Wetlands, Beaches, and Watersheds Inventory.

This authorization is subject to the condition that prior to disbursement of funds, the San Francisco Estuary Institute shall submit for the review and approval of the Executive Director of the OPC a detailed work plan, schedule, staff requirements, budget, and the names of any contractors intended to be used to complete the project, as well as discrete deliverables that can be produced in intervals to ensure the project is on target for successful completion. The project will be developed under a shared understanding of process, management and delivery.”

PROJECT SUMMARY:

The San Francisco Estuary Institute (SFEI) will develop a digital inventory of the shallow subtidal, intertidal and inland wetlands; estuaries; beaches; and watersheds draining directly to the California coast, including the inland Delta of the San Francisco Estuary (see *Exhibit A* below). The inventory will cover all wetlands and related resources within the 44 contiguous coastal U.S. Geological Survey 8-digit hydrologic unit watersheds from Mexico to Oregon, including all estuaries. It is important to note that the inventory is not intended to be used for regulatory purposes but rather is intended to meet non-regulatory information needs to support habitat restoration and protection and to assess progress towards reaching Strategic Plan habitat conservation targets.

The state has lost approximately 90% of its coastal wetlands due primarily to habitat destruction. Coastal wetlands which provide critical habitats for numerous endangered and threatened species, nurseries for marine life, flood protection, water quality improvement, and carbon sequestration, are especially threatened by sea-level rise. To turn the tide on these losses, increase coastal resilience and adapt to sea-level rise, Strategic Plan Target 1.1.7 commits OPC to working with partners to ensure an additional 10,000 acres of coastal wetlands will be protected, restored or created by 2025, and increase the acreage of coastal wetlands in California by 20% by 2030 and 50% by 2040. The inventory will establish a baseline of abundance, distribution, diversity, and condition of coastal wetlands and streams and establish procedures for tracking progress on achieving these explicit goals. Also, the inventory will include current California beach and rocky intertidal habitat which will enable the modeling of future sea-level rise impacts on vulnerable coastal natural resources including the state’s most iconic and heavily visited beaches.

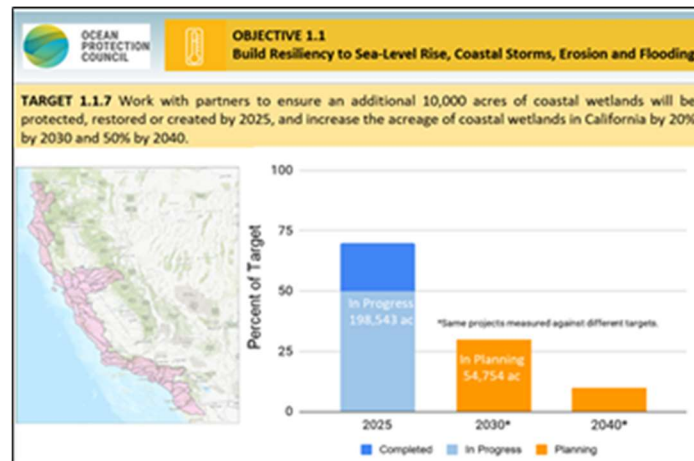
In addition, the inventory will have sufficient detail and accuracy to support regional adaptation planning, especially for wetland and beach protection and restoration. For example, the inventory will add value to, and incorporate qualified existing data from

regional adaptation programs, such as the Southern California Wetlands Recovery Project, San Francisco Bay Restoration Authority, and California EcoRestore of the Sacramento-San Joaquin Delta.

The inventory will use existing technical tools, datasets, and statewide and regional workgroups to minimize the costs and maximize the value of the inventory. It will also provide an opportunity to incorporate state-of-the science mapping methodologies, including machine learning and other aspects of artificial intelligence, to help realize the potential of automated mapping. To ensure that mapping is consistent and efficient, SFEI will solicit ongoing technical advice from leading experts in relevant science and technology in two primary ways:

- 1) The inventory will be advised by the Mapping Committee (i.e., “Level 1 Committee”) of the California Wetlands Monitoring Workgroup (CWMW) of the California Water Quality Monitoring Council. CWMW membership consists of state and federal agencies, including but not limited to, the State Water Resources Control Board, U.S. Environmental Protection Agency, California Department of Fish and Wildlife, and the Ocean Protection Council. The Level 1 Committee includes wetland mapping experts from regional, state, and federal agencies, the private and NGO sectors, and academia. SFEI co-chairs the CWMW and Level 1 Committee. The OPC and SFEI will work together to expand the Level 1 Committee to represent regional mapping efforts, namely the South and Central Coasts, and the San Francisco Estuary, as well as remote sensing and automated mapping, including but not limited to the NASA Jet Propulsion Laboratory.
- 2) The inventory will be developed using the Standard Operating Procedures (SOP) of the California Aquatic Resources Inventory (CARI) which were developed by a subcommittee of CWMW. In addition, CARI is the only statewide aquatic resource dataset that has been compiled and standardized to a common classification system, which can be used to develop landscape level profiles of aquatic resources at a local, regional, or broader scale. The CARI SOP includes a rigorous, detailed, stepwise procedure to use various input data, including digital imagery, elevation models, LiDAR, existing maps and other kinds of ancillary data to meet standardized requirements for map detail and spatial accuracy. The SOP may be modified, however, based on the advice of the Level 1 Committee. For example, the SOP may incorporate automated mapping, with appropriate guidance about its uses and limitations.

The project will also include the development of an online dashboard to track progress toward OPC strategic objectives relating to the inventory. Staff from SFEI and OPC will collaborate closely on the content, functionality, and design of the dashboard. One potential prototype of the dashboard is illustrated below.



A common issue with natural resources inventories of the type is the lack funding for their ongoing operation and maintenance (OM). This inventory will address this problem in three primary ways. First, the inventory and its online toolset will be entirely open-source; i.e., they will not involve any licensing or proprietary software or input data. All coding and other online engineering will remain in the public domain. Second, the inventory will set the stage for future updates through regional and local data sources, using existing online editing tools. This approach will increase OM cost-sharing with regional and local partners. Third, by involving the CWMW in an advisory and review capacity in the project, the work group will have a vested interest in the application and perpetuation of the inventory.

About the Grantee

SFEI is a nonprofit 501(c)(3) organization founded through the San Francisco Estuary Project of USEPA Region 9 to provide independent science to assess and improve the health and resilience of natural and human communities of the San Francisco Estuary, California, and beyond. SFEI administers the Aquatic Science Center, a Joint Powers Authority created by the State Water Resources Control Board and the Bay Area Clean Water Agencies to assist with the efficient delivery of scientific, monitoring, and information management support functions. SFEI employs 70 scientists and technicians who oversee an annual budget of over \$7,000,000 for innovative programs in Clean Water, Resilient Landscapes, and Environmental Informatics. Among its many accomplishments over the last 25 years, SFEI has led the development of the Bay Area, Delta, and statewide aquatic resource inventories. SFEI will leverage its scientific and technical expertise and partnerships to also lead this new inventory of the wetlands, beaches, and watersheds of coastal California.

Project Timeline

SFEI will develop a digital inventory of the wetlands, beaches, and watersheds of all the contiguous, 8-digit Hydrologic Units draining directly to the California coast, including the inland Delta of the San Francisco Estuary over an 18 to 24-month period. The below table provides a relative schedule for deliverables.

Task Name	Timeline	Deliverables
Task 1: Stakeholder Coordination	Ongoing	<ul style="list-style-type: none"> Meeting agendas and minutes
Task 2: Data Compilation and Mapping	Months 2-18	<ul style="list-style-type: none"> Criteria for data sources List of priority input datasets Classification crosswalks Finalized geospatial dataset Revised CARI standard operating procedures Online public inventory available for visualization and distribution
Task 3: OPC Dashboard	Months 3-16	<ul style="list-style-type: none"> Online public dashboard
Task 4: Project Management	Ongoing	<ul style="list-style-type: none"> Invoices and progress reports

PROJECT FINANCING:

Staff recommends that the Ocean Protection Council authorize encumbrance of up to \$275,000 to the San Francisco Estuary Institute to conduct the Coastal Wetlands, Beaches, and Watersheds Inventory from the FY'19 Environmental License Plate Fund.

Ocean Protection Council - FY 18/19 Environmental License Plate Fund	\$275,000
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CONSISTENCY WITH CALIFORNIA OCEAN PROTECTION ACT:

The proposed project is consistent with the Ocean Protection Act, Division 26.5 of the Public Resources Code, because it is consistent with trust-fund allowable projects, defined in Public Resources Code Section 35650(b)(2) as projects which:

(A) Eliminate or reduce threats to coastal and ocean ecosystems, habitats, and species: *This project will help reduce wetland, beach, and riparian loss by providing the most up to date information on habitat type and extent.*

(B) Improve the management of fisheries: *This project will improve our understanding of the extent and condition of estuaries and coastal watersheds which support salmonids and other fish species.*

(F) Improve management, conservation, and protection of coastal waters and ocean ecosystems: *Information from this inventory will directly inform the development of a state Coastal Wetlands Action Plan and a Beach Resiliency Plan.*

(G) Provide monitoring and scientific data to improve state efforts to protect and conserve ocean resources: *This inventory will provide a foundation for future coastal wetland, beach, and watershed inventories from which habitat gains and losses over time can be tracked.*

(H) Protect, conserve, and restore coastal waters and ocean ecosystems: *Evaluation of information from this inventory will directly inform the development of a state Coastal Wetlands Action Plan and a Beach Resiliency Plan.*

(J) Provide funding for adaptive management, planning coordination, monitoring, research, and other necessary activities to minimize the adverse impacts of climate change on California's ocean ecosystem: *Evaluation of information from this inventory will directly inform the development of a state Coastal Wetlands Action Plan and a Beach Resiliency Plan.*

CONSISTENCY WITH THE OPC'S STRATEGIC PLAN:

All aspects of the inventory are designed to help implement the OPC's Strategic Plan, as indicated by the table below.

Table of relations between the proposed inventory and OPC strategic targets.

OPC Objective	OPC Targets	Relationship to Inventory
1	1.1.4 - 7	Tracks net change and identifies surface waters threatened by sea level rise
	1.3.1	Provides tools to visualize surface waters threatened by sea level rise
3	3.1.3 - 4	Identifies beaches and eelgrass beds
	3.1.5 - 6	Provides spatial frame for modeling watershed yields of sediment

This project implements the following Strategic Plan actions: 1.1.7 Complete a statewide coastal wetland inventory by 2022, and 3.1.3 Identify the most endangered rocky intertidal habitats and beaches by completing a statewide mapping project/inventory of these habitats at 2-meter (or better) resolution by 2022.

COMPLIANCE WITH THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (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

because the project involves only data collection, research and resource evaluation activities that will not result in a serious or major disturbance to an environmental resource. Staff will file a Notice of Exemption upon approval by the OPC.

Exhibit A Project Location and Site Map

