

COASTAL CONSERVANCY

Staff Recommendation
September 24, 2009

NAPA RIVER SALT MARSH RESTORATION PROJECT MONITORING

Project No. 01-022-01
Project Manager: Betsy Wilson

RECOMMENDED ACTION: Authorization to accept and disburse a grant of up to \$65,000 from the San Francisco Foundation for monitoring and research activities associated with the Napa River Salt Marsh Restoration Project.

LOCATION: The northern edge of San Pablo Bay, bounded in the east by the Napa River and the west by Sonoma Creek, in Napa County (Exhibit 1)

PROGRAM CATEGORY: San Francisco Bay Area Conservancy

EXHIBITS

Exhibit 1: [Project Location and Site Map](#)

Exhibit 2: [Fact Sheet on Biosentinel Mercury Monitoring](#)

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 \$65,000 (sixty five thousand dollars) in San Francisco Foundation grant funds and the disbursement of up to that amount for monitoring and research activities associated with the Napa River Salt Marsh Restoration 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 authorization is consistent with the current Project Selection Criteria and Guidelines last updated by the Conservancy on June 4, 2009.
2. The proposed authorization is consistent with the purposes and objectives of Chapter 4.5 of Division 21 of the Public Resources Code, regarding the Conservancy’s mandate to address the resource and recreation goals of the San Francisco Bay Area.”

PROJECT SUMMARY:

This authorization would enable the Conservancy to accept and disburse up to \$65,000 in grant funds from the San Francisco Foundation to assist with monitoring and research activities to be undertaken as a part of the Napa River Salt Marsh Restoration Project. Specifically, the grant funds will be used to assist with a biosentinel mercury monitoring program to assess methylmercury exposure at the Napa-Sonoma Marsh and other locations in San Pablo Bay. Biosentinels are small fish species (e.g., prickly sculpin, Mississippi silverside, juvenile largemouth bass) which, because they are localized and short-lived, help to answer the “where” and “when” questions of how methylmercury gets into fish and the rest of the food web. For a detailed discussion of biosentinels and biosentinel mercury monitoring, refer to the May 2008 Fact Sheet (Exhibit 2) published by the San Francisco Estuary Institute.

The Napa River Salt Marsh Restoration Project involves the restoration of nearly 10,000 acres of former commercial salt ponds to a mix of tidal marsh and managed ponds, as well as delivery of recycled water to aid in the removal of bittern (a byproduct of salt production) that is stored in one of the ponds. The project is located along the western edge of the lower Napa River, is owned by the California Department of Fish and Game (“DFG”), and is managed as part of the Napa River Unit of the Napa Sonoma Marshes State Wildlife Area.

Phases I and II of the project were completed by the State in 2006 and 2007, respectively. Phase I involved opening 3,000 acres of salt ponds (Ponds 3, 4, and 5) to full tidal action for endangered species and fish and other aquatic species and Phase II involved restoration of 1,700 acres (Ponds 1, 1A, and 2) to managed ponds for waterfowl and shorebirds. Phase III, restoration of the final 1,900 acres (Ponds 6/6A, 7/7A, and 8) and design and construction of a recycled water pipeline to aid in bittern removal from Pond 7, is expected to begin construction in 2011.

The Napa River Salt Marsh Restoration Project is the first large-scale restoration of a former salt pond to occur in the San Francisco Bay and ecological monitoring efforts have already been conducted at the project site since 1996. However, continued monitoring is needed to meet regulatory requirements and to inform adaptive management decisions. In addition, while wetland restoration is generally viewed as a positive step for the ecology of a region, there are concerns that new large wetland restoration projects may increase methylmercury exposure both locally and regionally. Methylmercury is the form of mercury of primary concern as it is readily accumulated in the food web and poses a toxicological threat to highly exposed species. Recent research has indicated that a proper mercury monitoring program should include mercury levels in small fish as they provide a sensitive measure of methylmercury exposure to the aquatic food web.

Under the proposed authorization, the San Francisco Foundation grant funds will be used to assist with a biosentinel mercury monitoring program. The Conservancy will use the grant funds to contract with the Aquatic Science Center, a joint powers agency staffed by the San Francisco Estuary Institute, to conduct monitoring of mercury using a small fish biosentinel approach. Sampling sites will be located in San Pablo Bay, primarily within the Napa-Sonoma Marsh complex, but also offshore of the Hamilton Airfield restoration site and along the Petaluma River. The information generated from the biosentinel monitoring will be shared at the Napa-Sonoma Marsh Restoration Group, a public stakeholder group which was developed as a forum for exchanging information about research and restoration efforts in the 38,000-acre Napa-Sonoma Marsh Complex.

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Founded in 1948, The San Francisco Foundation is a regional community foundation which primarily serves San Francisco, Marin, Alameda, Contra Costa, and San Mateo Counties, with a focus on the areas of the environment, arts and culture, community development, community health, and education. In 1999, The San Francisco Foundation accepted a \$3,875,000 payment from a settlement of a lawsuit related to selenium releases to the Bay and designed the San Francisco Bay Fund Initiative (Bay Fund). Goals of the Bay Fund include supporting the synthesis of scientific data and identify research gaps to guide science-based San Francisco Bay-Estuary decision-making and management and promoting the establishment of sustainable, long-term water quality monitoring methods.

Site Description: The entire Napa-Sonoma Marsh Complex is spread over an area of approximately 38,000 acres. It includes more than nine miles of shoreline between the Napa River and Tolay Creek in Sonoma County. Its northern boundary is the upper limit of the historic tidelands. Most of the former tidal wetlands in the Napa-Sonoma Marsh Complex have been converted to salt ponds or diked agricultural grazing lands.

Although the marsh complex is degraded, it provides habitat for a number of threatened or endangered species including the California clapper rail, California black rail, salt marsh harvest mouse, San Pablo song sparrow, Sacramento River winter-run chinook salmon, Steelhead trout, Sacramento splittail (fish), Delta smelt (fish), and Mason's lilaepsis (plant). The former salt ponds in the Napa-Sonoma Marsh Complex provide habitat for large populations of waterfowl and shorebirds.

The Napa River Salt Marsh Restoration Project includes approximately 10,000 acres of the Napa-Sonoma Marsh Complex. The Napa River Salt Marsh was first diked off from the San Pablo Bay during the 1850s for hay production and cattle grazing. Much of the land was later converted to salt ponds, for salt production by the solar evaporation of bay water. In the early 1990s, the Cargill Salt Company ceased the production of salt and sold 9,850 acres of evaporator ponds and associated remnant sloughs and wetlands on the west side of the Napa River to the State of California for \$10 million. These ponds and remnant marshes and sloughs are now managed by DFG as the Napa River Unit of the Napa-Sonoma Marshes State Wildlife Area.

Project History: An estimated 85 percent of the historic tidal marshes in the San Francisco Bay-Delta Estuary have been filled or significantly altered over the past two centuries. The San Pablo Bay's diked baylands provide an opportunity for large-scale restoration of tidal marsh. Over the last decade, state and federal resource and regulatory agencies have purchased a number of properties within the Napa-Sonoma Marsh Complex, with the intent to restore much of the land to tidal marsh. Acquisitions include: U.S. Fish and Wildlife acquisition of the 1,400-acre Cullinan Ranch, DFG's acquisition of nearly 10,000 acres of former Cargill Salt Ponds and 62 acres along Huichica Creek, and the future transfer of Skaggs Island to the U.S. Fish and Wildlife Service. In 1994, the Conservancy disbursed \$1 million to assist in the \$10 million DFG acquisition of the Cargill Salt Ponds (Napa Salt Marsh).

Following are key events in the Napa River Salt Marsh Restoration Project since the property was acquired by DFG in 1994:

The Feasibility Study was completed in December 2004 with the signing of the Feasibility Report by the Corps' Chief of Engineers.

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In 2004-2005, the Conservancy used CALFED grant funds to contract an engineering firm to prepare design documents for Ponds 3-5. Simultaneously, DFG engineers produced design documents for Ponds 1-2.

Ducks Unlimited completed construction of Phase 1 (Ponds 3-5) of the project in 2006 and completed Phase 2 (Ponds 1-2) in 2007. The CALFED Bay-Delta Program contributed \$4.5 million in state funds for final design, monitoring, and construction of Ponds 3-5 and the Wildlife Conservation Board contributed approximately \$12 million in state funds towards construction of Ponds 1-5. This phase of the project moved forward entirely without the Corps.

In 2006-2008, the Conservancy contracted with an engineering firm to prepare 90% design documents for Ponds 6-8.

In November 2007, the Napa River Salt Marsh Restoration Project was authorized in the Water Resources Development Act of 2007.

To date, non-federal agencies (i.e., Conservancy, California Bay-Delta Authority, Wildlife Conservation Board, DFG, and Sonoma County Water Agency) have contributed over \$18 million for design and construction, plus \$10 million for land acquisition. With a 65% federal to 35% non-federal cost-share ratio in the federal Water Resources Development Act of 2007 authorization, no additional non-federal funds should be required to construct the remaining phases of the Napa River Salt Marsh Restoration Project.

PROJECT FINANCING

San Francisco Foundation grant	\$65,000
Conservancy staff time (in-kind)	TBD
Additional funding to complete monitoring work	TBD
Total Project Costs	\$65,000

Funding for the proposed disbursement of up to \$65,000 for monitoring and research activities associated with the Napa River Salt Marsh Restoration Project will be provided under a grant from the San Francisco Foundation's Bay Fund.

The Conservancy will provide in-kind staff time administering the San Francisco Foundation grant and managing the contract(s) for the monitoring and research work. In addition, the Conservancy will continue to seek federal funding to complete the project, which includes construction of Ponds 6-8 improvements, the recycled water pipeline, and monitoring and adaptive management measures.

CONSISTENCY WITH CONSERVANCY’S ENABLING LEGISLATION:

The project is undertaken pursuant to Chapter 4.5 of the Conservancy’s enabling legislation, Public Resources Code Sections 31160-31165, to address resource goals in the San Francisco Bay Area.

The Napa River Salt Marsh is located in Napa and Solano Counties, consistent with Section 31162 of the Public Resources Code, which authorizes the Conservancy to undertake projects and award grants in the nine-county San Francisco Bay Area.

Under Section 31162(b), the Conservancy may act to protect, restore, and enhance natural habitats and connecting corridors, watersheds, scenic areas, and other open-space resources of regional significance. The ultimate implementation of the Napa River Salt Marsh restoration project would restore and enhance nearly 10,000 acres of wetlands, and would be a habitat restoration project of regional and national significance. This project will provide monitoring and research activities as a part of the Napa River Salt Marsh Restoration Project.

Consistent with Section 31162(c), the Napa River Salt Marsh Restoration Project is helping to implement the policies and programs of the *San Francisco Bay Plan*, as described in the “Consistency with the San Francisco Bay Plan” section of this staff recommendation.

Under Section 31162(d), the Conservancy may act to promote, assist, and enhance projects that provide open space and natural areas that are accessible to urban populations for recreational and educational purposes. Napa River Salt Marsh provides an important open space resource for recreational purposes. The Napa River Salt Marsh Restoration Project includes a recreational component, which focuses on hunting, fishing, birdwatching, and boating.

Consistent with Section 31163(c), the Napa River Salt Marsh Restoration Project: (1) is supported by adopted regional plans (*San Francisco Bay Plan*), (2) serves a regional constituency, as the marsh is a hunting, fishing, birdwatching, and boating destination for the Bay Area, (3) can be implemented immediately, (4) provides benefits that would be lost if the project is not quickly implemented, and (5) includes significant matching funds.

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

Consistent with **Goal 10, Objective C** of the Conservancy’s 2007 Strategic Plan, the proposed project provides matching funds to support monitoring and research efforts to evaluate the effectiveness of the Napa River Salt Marsh Restoration Project in meeting its restoration goals.

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 June 4, 2009, 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.

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2. **Consistency with purposes of the funding source:** See the “Project Financing” section above.
3. **Support of the public:** In addition to widespread support within the Bay Area Congressional Delegation and by State Senators and Assemblymembers, restoration of the Napa-Sonoma Marshes is supported by Sonoma County Water Agency, the San Francisco Bay Joint Venture, The Bay Institute, Ducks Unlimited, Save The Bay, and the National Audubon Society. In addition, staff from the U.S. Fish and Wildlife Service, NOAA Fisheries, U.S. Geological Survey, the San Francisco Bay Regional Water Quality Control Board, and the San Francisco Bay Conservation and Development Commission support the project and participated in the restoration design process.
4. **Location:** The Napa River Salt Marsh Restoration Project lies in the nine-county San Francisco Bay Area, consistent with Section 31162 of the Public Resources Code.
5. **Need:** Accepting and disbursing the San Francisco Foundation grant funds will enable the State to conduct monitoring and research activities as required by project regulatory permits and as needed to inform adaptive management decisions. Biosentinel mercury monitoring will help track conditions and refine management strategies for mercury at the Napa River Salt Marsh Restoration Project site.
6. **Greater-than-local interest:** The proposed biosentinel mercury monitoring is a coordinated effort to be conducted in the San Pablo Bay region. It is currently unknown whether tidal marsh restoration projects will increase the bioavailability of methyl mercury, so this coordinated monitoring effort will provide critical information for a number of on-going and planned wetland restoration projects in the San Francisco Estuary.
7. **Sea level rise vulnerability:** During the design phase of the Napa River Salt Marsh Restoration Project, it was determined that habitat development should be able to keep up with or exceed sea level rise. The project will continue to be monitored to help determine if the restored habitat is being impacted by sea level rise and, if so, if adaptive management measures should be implemented.

Additional Criteria

8. **Urgency:** The proposed monitoring and research activities will generate information to help determine methylmercury exposure at and in the vicinity of the Napa River Salt Marsh Restoration Project and, if necessary, to refine management strategies to more effectively address mercury.
9. **Resolution of more than one issue:** The Napa River Salt Marsh Restoration Project is intended to solve DFG management problems, improve managed pond habitat for migratory birds, restore large areas of tidal marsh for endangered species and migratory birds, and enhance public access and recreational opportunities.
10. **Leverage:** See the “Project Financing” section above.
11. **Innovation:** The proposed project is expected to be a model for how to coordinate a scientifically sound, complex restoration project. The experience gained with the North Bay salt pond restoration will be invaluable as restoration planning proceeds in the South Bay. The lessons learned can also be applied to smaller scale restorations throughout the Bay Area.

12. **Realization of prior Conservancy goals:** “See “Project History” above.”
13. **Cooperation:** The Napa River Salt Marsh Restoration Project involves numerous public agencies, nongovernmental agencies, landowners, and funders. The Napa-Sonoma Marsh Restoration Group meets regularly to coordinate work and cooperate on restoration projects within the 38,000-acre Napa-Sonoma Marshes.
14. **Minimization of Greenhouse Gas Emissions:** In their review of current literature on the ability of tidal salt marshes to sequester carbon, Trulio, et al. (2007)¹ find that, from the standpoint of habitat restoration, restoring tidal salt marshes is one of the most effective measures for sequestering carbon. Besides being extremely productive habitats, tidal marshes remove significant amounts of carbon from the atmosphere.

CONSISTENCY WITH SAN FRANCISCO BAY PLAN:

The Napa River Salt Marsh Restoration Project is within the permit jurisdiction of the San Francisco Bay Conservation and Development Commission (“BCDC”).

The project is consistent with the following policies of BCDC's San Francisco Bay Plan as reprinted in February 2008:

Part III: The Bay as a Resource

Water Quality

- Policy 1 - The Bay’s tidal marshes, tidal flats, and water surface area and volume should be conserved and, whenever possible, restored and increased to protect and improve water quality (page 19).

Tidal Marshes and Tidal Flats

- Policy 4 - Where and whenever possible, former tidal marshes and tidal flats that have been diked from the Bay should be restored to tidal action in order to replace lost historic wetlands or should be managed to provide important Bay habitat functions, such as resting, foraging and breeding habitat for fish, other aquatic organisms and wildlife. As recommended in the Baylands Ecosystem Habitat Goals report, around 65,000 acres of areas diked from the Bay should be restored to tidal action (page 23).

Part IV: Development of the Bay and Shoreline

Salt Ponds

- Policy 2 - If the owner of any salt ponds withdraws any of the ponds from their present uses, the public should make every effort to buy these lands and restore, enhance or convert these areas to subtidal or wetland habitat. This type of purchase should have a high priority for any public funds available, because opening ponds to the Bay represents a substantial opportunity to enlarge the Bay and restoring, enhancing or converting ponds can benefit fish, other aquatic organisms and wildlife, and can increase public access to the Bay (page 65).

¹ Trulio, L., J. Callaway, S. Crooks. 2007. White Paper on Carbon Sequestration and Tidal Salt Marsh Restoration.

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- Policy 3 - Any project for the restoration, enhancement or conversion of salt ponds to subtidal or wetland habitat should include clear and specific long-term and short-term biological and physical goals, success criteria, a monitoring program, and provisions for long-term maintenance and management needs (page 65).

COMPLIANCE WITH CEQA:

Under 14 California Code of Regulations (“CCR”) Section 15306, basic data collection, research, and resource-evaluation activities which do not result in a serious or major disturbance to an environmental resource are categorically exempt from California Environmental Quality Act (“CEQA”) review. Upon approval, staff will file a Notice of Exemption for the project.