

COASTAL CONSERVANCY

Staff Recommendation  
October 21, 2010

**SALT RIVER ECOSYSTEM RESTORATION PROJECT: FINAL DESIGN**

Project No. 10-024-01  
Project Manager: Michael Bowen

**RECOMMENDED ACTION:** Authorization to disburse up to \$300,000 to the Humboldt County Resource Conservation District to prepare final designs for the Salt River Ecosystem Restoration Project near Ferndale, Humboldt County.

**LOCATION:** Ferndale, Humboldt County

**PROGRAM CATEGORY:** Resource Enhancement

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**EXHIBITS**

- Exhibit 1: Project Location, Site Map and Graphics
  - Exhibit 2: Salt River Ecosystem Restoration Project DEIR  
([http://humboldtrcd.org/news\\_\\_announcements](http://humboldtrcd.org/news__announcements))
  - Exhibit 3: March 8, 2007 Staff Recommendation
  - 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 31111 and 31251-31270 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes disbursement of an amount not to exceed three-hundred thousand dollars (\$300,000) to the Humboldt County Resource Conservation District (“RCD”) for the purpose of developing final designs for the Salt River Ecosystem Restoration Project subject to the condition that prior to the disbursement of funds, the RCD shall submit for the review and approval of the Executive Officer a workplan, including budget and schedule, and the names and qualifications of any subcontractors to be employed on the project, and a signing plan to acknowledge the Conservancy’s funding for these projects.”

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 current Project Selection Criteria and Guidelines.

2. The proposed authorization is consistent with the purposes and objectives of Chapter 6 of Division 21 of the Public Resources Code, regarding enhancement of coastal resources;
3. The project area has been identified in the Humboldt County Local Coastal Program as requiring public actions to resolve existing or potential resource protection problems."

**PROJECT SUMMARY:**

Staff recommends the Conservancy authorize the disbursement of up to \$300,000 to the Humboldt County Resource Conservation District ("RCD") to prepare final designs for the Salt River Ecosystem Restoration Project ("Project") near Ferndale, Humboldt County (See Project Location: Exhibit 1). The RCD is preparing to adopt a Draft Environmental Impact Report (DEIR: Exhibit 2) for the Project. The data and analysis necessary to complete the DEIR was collected and conducted under a prior Conservancy authorization to the County of Humboldt which worked with the RCD and others to help complete the DEIR (Staff Recommendation: Exhibit 3). Providing funds to complete final design will ensure that the RCD will be able to meet its targeted construction date of summer 2011. It also enables the RCD to draw upon construction funds already allocated by a variety of entities for project implementation. If final design is not completed by summer 2012, it is likely that most of the construction funds will be lost. The project is widely supported, and broadly funded (Exhibit 4).

The proposed project is comprised of four major components: wetland and upland restoration on the 444-acre Riverside Ranch property; erosion-reduction projects on private lands in the surrounding Wildcat Hills; excavation of a new Salt River channel, also on private lands; and long-term adaptive maintenance, management and continued enhancement of the restored project area. Completing the final engineering design for the restoration component of this project as proposed will ensure that the many benefits outlined in the DEIR, notably significant habitat restoration, and the improvement of agricultural productivity in the Ferndale area, will be achieved as scheduled.

The RCD has served as project lead for the Salt River Enhancement Project and is uniquely qualified and appropriate to complete final design in preparation for adoption of the DEIR, completion of the permitting process, and implementation of the proposed project beginning summer 2011.

**Site Description:** The Floodplain of the Eel River extending from the mouth up to the confluence of the Van Duzen River is known as the Eel River Delta. The Delta, located 13 miles south of the City of Eureka, covers approximately 33,000 acres, or 50 square miles (Exhibit 1). Elevations range from sea level at the river mouth to approximately 700 feet in upland areas near Table Bluff and the Wildcat Hills. Most of the delta lands are relatively flat. The Salt River, historically a tidal slough, is the lowermost tributary to the Eel River estuary. The Eel River estuary was once comprised of an intricate network of sloughs, side channels and open water, which, in combination with the tidal exchange and a substantial input of freshwater, provided a hospitable and ever-changing environment for a rich assemblage of aquatic species.

The Salt River Watershed can be divided into the upslope tributaries and the alluvial delta. The upslope tributaries drain the Wildcat Hills to the south of Ferndale. The steep slopes in the Wildcat Hills tributaries deliver sediment to the flat alluvial valley floors. Consequently, a series of broad alluvial fans are perched where the tributaries meet the valley floor. Historically, the

streams likely meandered over and around these fans, prior to flowing out to the main Salt River channel. The valley floors of the upland tributaries have, in virtually every case, been converted to pasture, and the tributaries have in many cases been channelized. The Salt River alluvial delta, in contrast with the steep Wildcat tributaries, is characterized by its relatively flat channel slope; elevation of the delta ranges from 3 to 80 feet above mean sea level. Historically, the Salt River was largely influenced by the tide, and was referred to as the “principal slough” of the lower Eel. The historic permanent channel length of the Salt River was 13.4 miles. As such, the Salt River provided extensive and excellent juvenile nursery and rearing conditions for a variety of species, including such commercially important species as salmon, herring, sardine, and Dungeness crabs. This expansive estuarine setting contributed to the Eel River’s prolific salmon and steelhead population, estimated at the turn of the twentieth century to be approximately half a million adult fish.

The Eel River Estuary has been significantly altered in the last 150 years. By 1970, the estuary, inclusive of sloughs and side channels, was reduced by tens of thousands of acres to 2,200 acres, or 3.4 square miles. The reduction in estuarine size corresponds with the increase of agricultural land within the delta region, as salt marsh was converted to pasture. It also corresponds to a general decline in the quality and quantity of the estuarine environment, as well as to a marked reduction in the tidal prism of the estuary, probably in direct relation to the decrease in inundated area. This equates to a possible 60 percent reduction in overall tidal prism<sup>1</sup>.

Similarly, the Salt River watershed has been significantly impacted since land use changes accelerated in the late 19th century. The tributaries to the Salt River now contribute large quantities of sediment, associated with timber harvest, grazing practices, road building, and unstable geology. Sediment deposition in combination with individual attempts at channel modification is so severe that the upper portion of the Salt River at the confluence with Williams Creek has been blocked and diverted, resulting in a 42 percent reduction in the size of the Salt River basin; currently the lower Salt River only receives flows from Francis Creek, Reas Creek, and Smith Creek (see Exhibit 1). The upper portion of the Salt River, including Williams Creek, flows northeasterly through Perry Slough/Old River towards the Eel River. The main channel of the Salt River and the lower reaches of its tributaries have become entirely choked with sediment and willows and have lost nearly all hydraulic function upstream of the Reas Creek confluence. The sediment deposits have also significantly reduced channel size in the reach between Reas Creek and the river mouth at the Eel estuary, although tidal influence extends up the Salt River channel adjacent to Riverside Ranch to river mile 3.5 (near the Reas Creek confluence).

In addition to excessive sediment load and deposition, historical land reclamation activities such as levee and tide gate construction have resulted in a substantial reduction in tidal influence in the Salt River channel. A small fraction of the original Salt River estuary complex is subject now to tidal exchange. This reduced tidal action has diminished channel scouring and exacerbated sediment deposition.

Historically, the Salt River functioned as a large and important component of the Eel River estuary. The Salt River channel, and its many sloughs and tributaries, functioned as important rearing habitat for estuarine species. They also provided a migration corridor for adult salmonids seeking spawning habitat in Salt River tributaries while providing rearing habitat for juveniles migrating downstream to the Eel River estuary. This was especially true for coastal cutthroat

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<sup>1</sup> The tidal prism is the quantity of water that flows in and out of an area with changes in tides.

trout. However, declining fish passage and poor water quality conditions have contributed to drastic population declines of all species of salmonids that formerly used the Salt River and its tributaries. In addition, there has been a substantial loss of wetlands and habitat diversity throughout the Eel River estuary (CDFG 1974, 2005).

The hydrologic dysfunction of the Salt River also causes significant problems related to flooding, discharge of wastewater treatment plant effluent, and overall water quality. During the wet season, and due largely to the absence of a clearly defined channel, relatively small rain events cause the Salt River and the lower reaches of its tributaries to overflow their banks, resulting in frequent winter flood conditions. Hundreds of acres of dairy and grazing land have been impacted by flooding, and entire parcels have been taken out of agricultural production for extended periods. In the summer, surface water disappears in several channel reaches as water flows subsurface through the accumulated sediment. Road culverts have become severely plugged by sediment, with complete blockage in some cases.

Historically, flows within the Salt River were sufficient to provide for fish passage sediment transport, and the required dilution for discharge from the City of Ferndale wastewater treatment plant. However, sedimentation has reduced the receiving water flows to the point that the effluent violates water quality standards. The North Coast Regional Water Quality Control Board issued a Cease and Desist Order to the plant on May 15, 2003, and the Order is still in effect. To abate this Order, the City is now upgrading the plant. In addition, sediment deposition near the confluence of Francis Creek and the Salt River puts the wastewater treatment plant, even as upgraded, at risk of flooding. Impaired channel conditions prolong drainage of surrounding areas, thereby contributing to other water quality problems associated with flooding of agricultural facilities and rural residences. Conditions in the Salt River and its tributaries worsen with each storm event and the associated delivery and buildup of sediment.

**Project History:** The Coastal Conservancy's first involvement at the Salt River occurred in the late 1980s through a grant to the Humboldt County RCD to produce an enhancement plan for the area. That plan, developed by the Natural Resources Conservation Service was neither pursued nor implemented because it concluded that there were no cost-effective alternatives for a completely, self-maintaining system. The plan further concluded that maintenance of recommended restoration was infeasible. It was also evident that community resistance to ecological restoration of private property impeded the restoration. In any event, the project lost momentum.

Though enhancement progress was impeded, flooding problems mounted. As flooding and habitat conditions on the Salt River worsened, and as the wastewater treatment plant fell into a greater degree of non-compliance, Humboldt County, the City of Ferndale, and the RCD worked together to gain community support for a solution, and cooperated with the Conservancy, DFG, National Marine Fisheries Service, and the Coastal Commission on the present enhancement strategy. Furthermore, the ability to expand the project footprint to include Riverside Ranch has largely changed the dynamic of the project and rendered more enhancement options feasible.

An affiliation of interested parties known as the Salt River Advisory Group (SRAG) spent four years developing a conceptual enhancement plan for the entire Salt River watershed. This plan was funded by a 2003 Conservancy grant to the RCD, and was so well conceived that it enabled the RCD to apply for, and receive commitments of more than \$6 million in implementation funds

from the State Water Resources Control Board's Proposition 50 Integrated Water Resources Management Plans, and Consolidated Resources Management Plan grant programs. Further, utilizing the conceptual proposal developed by the SRAG, the California Department of Fish and Game applied for and received \$1 million from the United States Fish and Wildlife Service for the purpose of acquiring Riverside Ranch, a key property within the project footprint. The Coastal Conservancy also contributed to that acquisition, as did the Wildlife Conservation Board.

Following completion of the conceptual plan, the Conservancy provided a grant of \$300,000 to the County of Humboldt to help develop all materials necessary to complete an environmental compliance document and other materials necessary for permit applications. The County, in concert with the SRAG and other parties, developed all necessary materials. Conservancy staff assisted the RCD and the County by drafting significant portions of the Draft Environmental Impact Report. That document was released April 2010, and adoption by the RCD as lead agency is anticipated in November 2010. The State Lands Commission will likely serve as the Responsible Agency. The RCD is now preparing to retain a team of consultants to complete the final designs and engineering for the proposed project.

#### **PROJECT FINANCING**

<b>Coastal Conservancy</b>	\$300,000.00
<b>State Water Resource Control Board</b>	\$245,000.00
<b>North American Wetlands Conservation Act</b>	\$100,000.00
<b>Wildlife Conservation Board</b>	\$100,000.00
<b>Total Project Costs</b>	<b>\$745,000.00</b>

The anticipated source of Conservancy funds for this project is the fiscal year 2010/2011 appropriation to the Conservancy from the Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Fund (Proposition 12). These funds are available for the acquisition, enhancement, restoration, protection and development of coastal resources north of the Gualala River in accordance with the Conservancy's enabling legislation. (Public Resources Code § 5096.352(c)(2)). The grantee will produce final designs and associated information for project implementation, the approximate value of which will be at least \$745,000.

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

The proposed project would be undertaken pursuant to Chapter 6 of the Conservancy's enabling legislation, Public Resource Code Sections 31111 and 31251-31270, as follows:

Pursuant to §31251, the Conservancy may award grants to public agencies to enhance coastal resources. This project will facilitate the restoration of hydraulic connectivity between the upper and lower Salt River and restoration of hundreds of acres of salt marsh and freshwater habitat on the Riverside Ranch property and historic Salt River channel. Planning activities under this grant will benefit a variety of aquatic resources that are partly within and partly outside the coastal zone (Pub Res. Code § 31251.2).

Pursuant to §31252, the proposed project is consistent with the County of Humboldt's Local Coastal Program, which includes policies in favor of public action (in particular, the County, working with property owners and state and federal agencies) to resolve resource protection

problems in the Eel River area, as described in the “Consistency with Local Coastal Program Policies” section below.

Consistent with §31253, the amount of funding recommended for the proposed project is based on the total amount of funding available for coastal resource enhancement projects, the fiscal resources of the applicant and its project partners, and the urgency of the project relative to other eligible coastal resource enhancement projects.

Pursuant to Section 31111, the Conservancy “may fund and undertake plans and feasibility studies, and may award grants to public agencies and nonprofit organization” for the purposes of preserving coastal agricultural lands, restoring coastal habitat, providing public access to the coastline, and undertaking other functions prescribed in Division 21. Consistent with this section, the proposed project provides funds complete the planning work necessary for complete restoration and management planning to enhance wildlife habitat and coastal agriculture in the Salt River Basin.

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

Consistent with **Goal 5 Objective A** the project will design a wetland restoration and stream corridor enhancement project. The current authorization will allow completion of the planning phases that will lead toward project implementation.

Consistent with **Goal 6 Objective E** this project will assist the Conservancy to complete a plan to improve water quality to benefit coastal resources....” The final designs will assist with the imminent implementation of the enhancement project. Consistent with this goal, the designs will define a project that improves adjacent farmlands near Ferndale by alleviating chronic flooding problems there. Consistent with this section, the enhancement project is designed to foster the long-term viability of coastal agriculture in Humboldt County not only by reducing flooding of agricultural lands, but also by working with farmers and ranchers throughout the watershed to reduce the impacts of their operations on wildlife habitat and water quality.

**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.
2. **Consistency with purposes of the funding source:** See the “Project Financing” section above.
3. **Support of the public:** This project is supported by the City of Ferndale, the County of Humboldt, Assemblyman Wesley Chesbro, Senator Patricia Wiggins, Congressman Mike Thompson, and others. Supporting agencies include the California Department of Fish and

Game, the Wildlife Conservation Board, the United States Fish and Wildlife Service, the National Marine Fisheries Service, and others (Exhibit 4).

4. **Location:** The proposed project is located within the coastal zone in the Eel River Delta, near Ferndale, California.
5. **Need:** Construction of the project is planned to begin summer 2011. The RCD is now addressing comments to the DEIR, and hopes to adopt the document in November. Design refinements will assist with that process. However, permit applications and CEQA review have been made based upon a 30% design level. The project awaits final design and preparation for bid. Therefore, there is an urgent need for Conservancy funding to enable the RCD to complete final design and go to construction, thereby tapping the significant funding they have attracted for project implementation.
6. **Greater-than-local interest:** The Salt River Enhancement Project represents one of the most significant enhancement projects in northern California. Rare is the opportunity to restore hundreds of acres of tidal marsh and miles of historic channel at one time. The habitat benefits will accrue to Pacific salmon populations, migratory songbird populations, migratory waterfowl populations, and more. The benefits to the agricultural community of the Ferndale area will also be substantial, and significantly improve the economic outlook for this relatively depressed area. A vibrant estuarine ecosystem aside a thriving agricultural community benefits the entire State by providing ecosystem values, and high quality dairy products, both in a socially and environmentally sustainable fashion.
7. **Sea level rise vulnerability:**  
Tide heights and tidal datums increase over time with sea level rise. The National Ocean Survey (NOS) estimates a 4.73 millimeter per year sea level rise (equivalent to 1.55-feet in 100-years) at the Humboldt Bay gauge. However, The Pacific Institute predicts that mean sea level along the California coast will rise from 1.0-1.4 meters by the year 2100 (Pacific Institute 2009; IPCC, 2007; USACE, 2009).

With the exception of upslope erosion control activities, elevations in the project area range from sea level to 50-feet (the elevation at the upper extent of channel excavation). A variety of project features are incorporated to address anticipated sea level rise. First, setback berms at Riverside Ranch are designed with sufficient height to withstand sea level rise projections, and are designed with gently sloping faces so as to accommodate shifting vegetation types under a steadily rising sea level. Second, although the extent of tidal influence up the newly excavated Salt River channel will increase over time, the project will provide improved hydraulic connectivity, and better aquatic habitat—and drainage—regardless of sea level rise. Overall, the project design is fully expected to help the project area adapt to and even benefit ecologically from rising sea levels.

### **Additional Criteria**

8. **Urgency:** As described under “Need” above, there is an urgent need for final design funding now. If the RCD does not complete the final designs quickly, it is probable that they will fail to meet their 2011 construction season. If they fail to meet the 2011 construction season, the largest proportion of implementation funding will revert, and the project will not proceed as planned. Furthermore, the flooding occurring in the area has reached an emergency level.

Inaction will result in ill-advised and haphazard “solutions” to the problem, solutions that are localized, lacking in any appropriate context, and frequently unpermitted.

9. **Resolution of more than one issue:** The project seeks to resolve a myriad of issues. Key among them are: drainage problems on agricultural property; salt marsh habitat loss; freshwater channel/habitat in-filling; Aleutian cackling goose depredation on nearby properties; sediment erosion from upslope areas; non-compliance with discharge requirements from the Ferndale Sewage Treatment Plant, flooding of county infrastructure, and more.
10. **Leverage:** See the “Project Financing” section above.
11. **Conflict resolution:** As outlined in number 9, above, the hydraulic dysfunction of the Salt River has either triggered, or highlighted existing conflicts surrounding land use and management in the Ferndale area. The proposed project will help resolve most of these conflicts in a fashion that balances environmental restoration on a grand scale, with the enhancement of agricultural values in the Coastal Zone.
12. **Innovation:** Striking the balance described in “Conflict Resolution,” above, is a highly innovative approach. The approach has garnered tremendous social, technical, and financial support for the project.
13. **Readiness:** The RCD has proposed a challenging but feasible schedule for completing the project timely, providing final design continues promptly.
14. **Realization of prior Conservancy goals:** The Coastal Conservancy and the RCD have attempted to bring this project to fruition for nearly twenty years. Never before has the project advanced this far, and never before has sufficient funding been available for implementation. The Conservancy’s first major grant to the RCD enabled the RCD and the County to leverage millions of dollars in funding to implement a remarkable, multi-benefit project. SCC’s ensuing grant to the County (\$300,000), combined with the County’s strong technical leadership, translated the project from a concept to a very real project ready for permit applications and CEQA analysis. These developments enabled the RCD to attract yet more funding for implementation. Just as the Coastal Conservancy has provided the initial seed-money to bring this project to its current status, providing this final design grant will ensure that the Conservancy’s goals for this area will begin to be realized.
15. **Return to Conservancy:** See the “Project Financing” section above.
16. **Cooperation:** The project was developed cooperatively by a broad array of interests and individuals including local government representatives, regulatory review agencies, individual landowners, and project funders.
17. **Vulnerability from climate change impacts other than sea level rise:** The project site lies within a designated freshwater emergent wetland, and is surrounded by tidally-influenced slough channels. Climate change impacts will most likely be significant, though unforeseeable. One of the likely changes is to vegetation and wildlife communities. The project incorporates a number of design elements, such as gradual elevation changes, to accommodate shifting vegetation communities. Other benefits envisioned as a result of the project (public access, grazing, and possible additional wetland restoration) are not expected to be highly vulnerable to such impacts, should they occur.

18. **Minimization of greenhouse gas emissions:** This is a planning grant and as such is not expected to produce significant greenhouse gas emissions. Design elements will include measures to avoid or minimize greenhouse gas emissions to the extent feasible and consistent with the project objectives. Preservation and restoration of the wetlands could serve to offset these and other emissions by acting as a carbon sink.

**CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:**

The proposed project will result in the development of final designs to address habitat restoration and agricultural preservation within the Coastal Zone generally, and within the jurisdiction of Humboldt County's Local Coastal Plan Eel River Area particularly.

The County of Humboldt Local Coastal Program (LCP) Eel River Area outlines several policies that relate to the preservation and restoration of sensitive coastal habitat, and the Salt River in particular, including: Policy 3.28: "Minimize the risk to life and property in areas of high geologic, flood and fire hazard"; Policy 3.34: "The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas agricultural economy and conflicts shall be minimized between agricultural and urban land uses"; Policy 3.41: "Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values"; Policy 3.41 1.a.(2): "The County shall continue to pursue opportunities to restore or enhance, if possible, in-stream flows"; Policy 3.41 F.6.a: ". . . long-term protection of riparian vegetation . . . should be provided. . . . To achieve these objectives, the County should work with property owners and affected State and Federal agencies"; Policy 3.41 G.7.: "Natural drainage courses . . . shall be retained and protected from development which would impede the natural drainage pattern or have a significant adverse effect on water quality or wildlife habitat."

As described in the DEIR, the proposed project adheres to the letter and spirit of the LCP guidelines.

**COMPLIANCE WITH CEQA:**

Preparation of the final designs involves only data gathering, planning, and feasibility analyses for possible future actions and is thus statutorily exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to 14 California Code of Regulations §15262. The designs will incorporate environmental considerations identified in connection with the DEIR under development for the project. The designs do not have a legally binding affect on future Conservancy activities or authorizations.

Staff will file a Notice of Exemption upon approval.