

COASTAL CONSERVANCY

**Revised Staff Recommendation**  
March 26, 2015

**White Slough Restoration**

Project No. 13-001-02  
Project Manager: Joel Gerwein

**RECOMMENDED ACTION:** Consideration and authorization to disburse up to \$950,000 of the US Fish and Wildlife Service grant funds and up to an additional \$500,000 in Conservancy funds to the Humboldt County Resource Conservation District to implement the White Slough Restoration Project and to adopt the Final Initial Study and Mitigated Negative Declaration, and Mitigation Monitoring and Reporting Program for the project, in the Humboldt Bay National Wildlife Refuge on Humboldt Bay.

**LOCATION:** Southeast portion of Humboldt Bay shoreline, unincorporated Humboldt County (Exhibit 1)

**PROGRAM CATEGORY:** Integrated Coastal and Marine Resources Protection; Climate Change

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**EXHIBITS**

- Exhibit 1: [Project Location](#)
- Exhibit 2: [Restoration Design](#)
- Exhibit 3: [Site Photographs](#)
- Exhibit 4: [Initial Study, Mitigated Negative Declaration, including Mitigation and Monitoring Reporting Plan](#)
- Exhibit 5: [Project Letters](#)

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**RESOLUTION AND FINDINGS:**

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31220 and 31113 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the acceptance of one million dollars (\$1,000,000) from the U.S. Fish and Wildlife Service for the White Slough Restoration Project and disbursement of an amount not to exceed one million four hundred fifty thousand dollars (\$1,450,000) to the Humboldt County Resource Conservation District (HCRCD) for the restoration of coastal wetlands at White Slough, within the Humboldt Bay National Wildlife Refuge on Humboldt Bay. The Conservancy further adopts the “Final Initial Study and

Mitigated Negative Declaration for the White Slough Restoration Project” (IS/MND) and the Mitigation Monitoring and Reporting Program (MMRP) (attached to the staff recommendation as Exhibit 4). This authorization is subject to the following conditions:

1. Prior to disbursement of any funds for each phase of the Project, the HCRCDC shall submit for the review and approval of the Executive Officer:
  - a. A work plan, schedule, budget, and the names of any contractors or subcontractors to be retained for implementation of the project.
  - b. Evidence that all permits and approvals necessary to that phase of the Project have been obtained.
  - c. Evidence that all necessary funds for implementation of that phase of the Project have been obtained.
  - d. A plan for the installation of a sign acknowledging Conservancy and USFWS funding.
2. In implementing the Project, the HCRCDC shall ensure compliance with all applicable mitigation measures and monitoring and reporting requirements for the project that are identified in the IS/MND and MMRP certified and adopted by the Conservancy at its March 26, 2015 meeting, or in any permits, approvals or additional environmental documentation required for the 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 project is consistent with the current Project Selection Criteria and Guidelines.
2. The proposed project is consistent with the purposes and objectives of Chapter 5.5 of Division 21 of the Public Resources Code, regarding integrated coastal and marine resources protection projects.
3. The Conservancy has independently reviewed and considered the information contained in the IS/MND and public comments received on this document, pursuant to its responsibilities under the California Environmental Quality Act (“CEQA”). The IS/MND has been completed in compliance with CEQA under the direction and supervision of the Conservancy and reflects the Conservancy’s independent judgment and analysis.
4. The IS/MND identifies potentially significant effects from implementation of the Plan in the areas of biological resources, hazards/hazardous materials, hydrology/water quality, and noise. As modified by incorporation of the mitigation measures identified in the IS/MND, project implementation will avoid, reduce, or mitigate all of the possible significant environmental effects of the project to a level that is less than significant. Based on the record as a whole, there is no substantial evidence that the implementation of the White Slough Restoration Project, as mitigated, will have a significant effect on the environment.
5. The project is consistent with the Humboldt Bay National Wildlife Refuge Comprehensive Conservation Plan and the Water Quality Control Plan for the North Coast Region.”

**PROJECT SUMMARY:**

Staff recommends the acceptance and disbursement of the USFWS National Coastal Wetlands Conservation Program grant along with the Conservancy's required matching funds to the Humboldt County Resource Conservation District (HCRCD) for implementation of the White Slough Restoration Project. Staff further recommends that the Conservancy adopt the Final Initial Study and Mitigated Negative Declaration (IS/MND) and the Mitigation and Monitoring Plan for the project. The project will restore coastal wetlands in the White Slough Unit (WSU) of the Humboldt Bay National Wildlife Refuge (HBNWR) (Exhibits 1-4) and will be implemented in phases, due to a relatively short summer construction window and the challenges of importing sediment to the site. Approval of the IS/MND and the grant funding now will allow the HCRCD to construct Phase I of the project in summer 2015, while sediment sources and cost estimates for Phase II are identified and refined.

The project will restore 40 acres of salt marsh adjacent to Humboldt Bay. Salt marsh was historically the most widespread wetland type around Humboldt Bay, but only ~10 percent remains (~900 acres of current salt marsh remaining from ~9,000 historic acres), largely due to diking from the late nineteenth to the early twentieth century. The majority of land within the HBNWR boundary was historically tidally influenced, comprising large areas of salt marsh. Most of the lands were diked to prevent tidal water exchange and to promote agricultural practices. Many changes in the topography, hydrology, soils, and plant species composition have taken place since these lands were diked, which have degraded their habitat value and made them vulnerable to inundation and conversion to mudflat.

Native salt marsh is a threatened habitat type in Humboldt Bay and throughout the United States. Salt marsh contributes invaluable nutrients to the estuarine ecosystem; provides important habitat for fish, invertebrates, many shorebirds, and other waterbirds; filters out pollutants; and buffers adjacent lands from flood tides and storms. Protection from flooding and storms is becoming more important due to sea level rise. Salt marshes provide habitat for the endangered tidewater goby, several species of threatened salmonids, and possibly for the threatened eulachon. Because of extensive diking, the Humboldt Bay estuary has sustained significant losses of salt marsh, primary productivity, and natural hydrology resulting in changes to sedimentation, deposition, currents, habitat for estuarine plant and animal species, and water quality. The WSU provides one of the few remaining opportunities to regain lost salt marsh around Humboldt Bay.

In addition to ten acres of undiked wetlands, the WSU includes approximately 65 acres of diked wetlands, consisting primarily of brackish marsh (60 acres), as well as small areas of freshwater marsh, and riparian habitat. Brackish marsh at the WSU is very low in species diversity, consisting of the native salt grass (*Distichlis spicata*), invasive sickle grass (*Parapholis strigosa*) and occasional non-native creeping saltbush (*Atriplex triangularis*). As part of a functioning tidal marsh, where it occurs as a more diverse association, this brackish marsh vegetation would be of much higher value. Behind the dikes it forms a near monoculture of low wildlife value and biodiversity.

The WSU is divided into the West Unit, North Unit, and East Unit. (Exhibits 1-2). The Project is focused on the West Unit, which consists of approximately 40 acres of diked brackish marsh that has subsided and is currently approximately three feet below sea level. A portion of the dike

protecting the unit from tidal inundation failed on August 16, 2014. A temporary dam consisting of a heavy duty geotextile woven polypropylene tube filled with water (Aqua Dam) was installed in the breach as a temporary measure. Other dike sections are severely eroded and expected to fail in the near future (Exhibit 2). Because the area has subsided, dike failure would result in a conversion of brackish marsh to mudflat, and would expose the Tompkins Hill Road-Highway 101 Interchange, which provides access to the College of the Redwoods, to increased threat of flooding. The threat of dike failure is exacerbated by ongoing sea level rise. Details about project phasing follow.

### **West Unit**

As noted above, the West Unit has subsided, and would not support marsh vegetation if the dike were breached at this time. The project will restore tidal marsh in the West Unit (Exhibit 2). Surface elevations will be raised by placing up to 200,000 cubic yards (cy) of clean sediment, implemented in phases. Utilizing dredged materials to restore salt marsh at the WSU will be a beneficial reuse of what might otherwise be disposed of on existing uplands at significant cost. Phasing the project may lower the cost to implement other Conservancy projects, including the Martin Slough Enhancement Project, the Salt River Enhancement Project, as well as the dredging of Humboldt Bay marinas. The restoration would provide benefits for fish and wildlife habitat and increased carbon sequestration in restored salt marshes. A secondary but important purpose of the project is to create a “living shoreline” to protect the Highway 101 road prism from erosion by wave fetch and sea level rise.

#### *Phase I*

Phase I of the project will involve the placement of approximately 40,000 cy of sediment to construct a tidal ridge dividing the project area into three drainage cells in the West Unit, as well as an additional cell on the adjacent Caltrans right of way (ROW) which will largely remain at existing elevations. Clean sediment for Phase I of the project is currently available from the Conservancy-funded Salt River Ecosystem Restoration Project (SRERP) and from the Bear River Band of the Rohnerville Rancheria. The tidal ridge will be at an elevation of approximately nine feet, and will support brackish marsh vegetation. The drainage cells on the West Unit are referred to as the North Basin, Middle Basin, South Basin, and Caltrans Basin.

While the tidal ridge will support marsh vegetation, it will be at a sufficiently high elevation to provide critical protection to adjacent infrastructure, and to provide access to the project area for construction equipment while Phase II is being completed. If the dike protecting the West Unit fails again before Phase I is completed, the project would not be feasible without first repairing the dike, which is likely to be costly. It is therefore critical to complete Phase I in summer 2015. The projected cost for Phase I is estimated to be approximately \$1,200,000. The sediment sources for Phase I have been identified and sufficient funds have been secured for implementation.

#### *Phase II*

Additional fill material will be placed in Phase II of the project to raise the elevations of North, Middle, and South Basins in the West Unit. Fill material will be graded to create a complex mosaic of tidal marsh, with salinities ranging from salt to fresh. The tidal marsh will include a network of tidal channels and two depressional wetlands/ponds.

The North, Middle, and South Basins will be completed in sequence over the course of at least two construction seasons (2016 and 2017). If less than 200,000 cy of sediment is secured for the project, the WSU will still be restored to tidal marsh, but the acreage and configuration of mudflat and low to high elevation tidal marsh will change. After all the fill is placed, portions of the levee will be lowered to suitable tidal marsh elevations. Material excavated from breach locations will be used for internal fill. Other portions of the levee will be left in place to create roosting areas and high-tide refugia for birds. The remaining tidegate and the temporary water-filled cofferdam will be removed. The levee will be fully breached in three locations to fully restore tidal inundation in each basin. The Caltrans basin will remain as a muted marsh, and a culvert with a fish-friendly flap gate will be installed to provide drainage into the South Basin. Chism Creek, which currently drains to the bay via a ditch, will be rerouted south into the marsh through a constructed channel. This will create a larger mosaic of freshwater, brackish, and salt marsh habitats.

The cost to construct Phase II will depend on the sediment sources and resulting costs for hauling. The Humboldt Bay Harbor, Recreation, and Conservation District (Harbor District) is a likely source of a large quantity of sediment. The Harbor District's dewatering site on the North Spit of Humboldt Bay contains approximately 100,000 cy of sediment. An additional 50,000 cy of sediment could be generated by dredging the Woodley Island and Eureka Municipal Marinas. This dredging operation is expected to take place within the next two years. If soil testing indicates that this sediment is appropriate for use at White Slough, the Harbor District has indicated that it would pay a substantial amount of the hauling costs, as indicated in the support letter provided (Exhibit 5). The Martin Slough Restoration Project is an additional potential sediment source. It could provide up to 100,000 cy of sediment as well, and would be expected to contribute toward the cost of sediment hauling. The Martin Slough Restoration Project is expected to begin implementation in the next two years. Based on these sediment sources, the cost for implementing Phase II of the project could range from \$850,000 to \$1,650,000. Given that \$1,800,000 have been secured for the project at present and Phase I costs will be approximately \$1,200,000, an additional \$250,000 to \$1,050,000 will need to be raised to fully implement Phase II. If sufficient funds to fully implement Phase II are not secured, tidal wetlands can still be restored to the project area, but the area of marshes restored will be smaller because a smaller amount of sediment will be imported to the site. See the Project Financing section for a discussion of potential sources of additional funds. The Conservancy grant conditions stipulate that grant funds will not be disbursed for Phase II until sufficient funding has been secured to construct that phase.

### **North Unit**

The dike separating the North Unit from tidal influence is in relatively good condition, and the elevation of the North Unit is close to sea level, indicating that this area has not subsided significantly. Phase I will include modification of four existing tide gates in the North Unit to establish a muted tide cycle, and historic channels will be cleared of obstructions and sediment to improve drainage connectivity to support 16 acres of tidal and brackish water wetlands and avoid mosquito production.

Proceeding with permitting as soon as possible is imperative in order to construct Phase I in summer 2015. If Phase I is not constructed in summer 2015, the threat of dike failure will increase. Dike failure would impose significant additional costs for project implementation.

Despite the uncertainty in the total project costs for all phases, certification of the IS/MND is needed now to facilitate the preparation and approval of the following permitting documents:

- Environmental Assessment (“EA”) for National Environmental Policy Act compliance, based upon HBNWR’s EA for its 2009 Comprehensive Conservation Plan and supporting documentation for California Environmental Quality Act compliance
- Section 404 U.S. Army Corps of Engineers permit (Individual Permit)
- Consistency Determination under the California Coastal Act (Federal Division of the California Coastal Commission)
- Water Quality Certification from the North Coast Water Quality Control Board
- Development Permit from the Humboldt Bay Harbor, Recreation and Conservation District

The HCRCD has been the Conservancy’s partner in implementing the Salt River Ecosystem Restoration Project, a complex, multi-phase project that involved managing numerous state and federal grants and restoring over 200 acres of tidal marsh on state land. As discussed above, sediment from the Salt River project will be utilized in implementing the White Slough Project. The HCRCD has implemented a number of other restoration and habitat enhancement projects funded by public agencies, including the Eel River Cooperative Sediment Reduction and Water Quality Improvement Program, the Yager Creek Erosion Control and Restoration Project, and the Mad River Weir Removal Project. These projects included road upgrading and decommissioning, gully prevention and control, riparian fencing, in-stream habitat restoration, and bank stabilization. The HCRCD was formed in 1987 as a special district of the County of Humboldt. The district is governed by a Board of Directors made up of volunteer community leaders appointed by the Humboldt County Board of Supervisors.

**Site Description:**

As California’s second largest natural bay and the largest estuary on the Pacific coast between San Francisco Bay and Coos Bay, Oregon, Humboldt Bay (Exhibit 1) is a complex ecosystem and valuable resource for California and the nation because of its natural and environmental resources, its aesthetic appeal and recreational opportunities, its ecological services, economic benefits, and its vital transportation links. Visitors and Humboldt County residents alike value Humboldt Bay for its natural and man-made attributes. The biota associated with Humboldt Bay is diverse and ecologically significant at scales ranging from a local focus on fisheries and algal uses by local residents to a participation in hemispheric ecological patterns such as shorebird and waterfowl migration. The Bay hosts over 100 plant species, 300 invertebrate species, 100 fish species, and 200 bird species, including those that rely on the bay as they travel the Pacific Flyway. Recent studies indicate the importance of the Bay in the life cycles of commercially and recreationally important fish species, and the general level of biological vitality in the Bay has been identified as an important aesthetic and quality-of-life variable for both residents and visitors to the area. During the late-nineteenth and early twentieth centuries, diking and filling reduced Bay salt marshes from an estimated 9,000 acres to only 900 acres today. Bay habitat has been further disturbed by discharges of agricultural and urban runoff, industrial and recreational uses, and colonization by invasive cordgrass.

*White Slough Unit*

The WSU is a unit of the Humboldt Bay National Wildlife Refuge. The WSU totals ~75 acres in size and consists primarily of diked former tidal marsh that was used for pasture. The management of this unit is constrained by its proximity to the railroad and Highway 101 (including the Tompkins Hill overpass) which bracket and split it into North, West and East Units. There is a perennial spring upstream of this unit that contributes a small source of fresh water through the West Unit and ultimately out to the bay. Brackish marsh constitutes the greatest acreage on the WSU. Vegetation types present include ~60 acres of brackish marsh dominated by salt grass, 10 acres of undiked salt marsh dominated by cordgrass, one acre of freshwater riparian/swamp in the higher elevations along the eastern boundary of the unit, and 6 acres of freshwater marsh/agricultural wetland (Exhibit 2). The dikes were in poor condition when the land was acquired by the refuge and have not been maintained because this area was always expected to ultimately be allowed to revert to salt marsh. However subsidence of the former tidelands would result in conversion of the area to mudflats if the dikes failed or were allowed to breach. There are several open water channels along the railroad, dike, and highway. Chism Creek, which flows between the East and West Units of the WSU, is channelized and discharges directly to Humboldt Bay. There are four tidegates in the northern area and a dozen culverts beneath Highway 101 that discharge runoff into this area. The southern area has seven culverts and one tidegate.

**Project History:** The Conservancy has worked with the HBNWR and others around Humboldt Bay for decades to protect and restore tidal marshes and other coastal habitats. The HBNWR contacted the Conservancy about this project in fall 2012 and has been developing the project with staff since that time. In February 2013, the Conservancy granted \$30,000 to fund permitting and planning work for the White Slough Restoration Project. This authorization has funded work on the IS/MND and various permits applications that are currently in process. Conservancy staff has actively supported project design and the identification of sediment sources for the project, and assisted with preparation of the IS/MND. Conservancy staff worked with the USFWS HBNWR staff to apply for the NCWC funds, which were awarded in January 2014.

The project will demonstrate the beneficial reuse of sediment from various locations around Humboldt Bay, including the Martin Slough Restoration Project and the dredging of the Woodley Island and Eureka Marinas. The Conservancy provided a grant of \$100,000 to the Redwood Community Action Agency (RCAA) for restoration planning for Martin Slough, and Conservancy staff is currently engaged with RCAA in preparing environmental compliance for the Martin Slough Restoration Project. In addition, the Conservancy provided a grant of \$85,000 to the Humboldt Bay Harbor, Recreation and Conservation District to study the feasibility of dredged materials reuse for marsh restoration and sea level rise adaptation. Other Conservancy projects with the HBNWR include support for public access development in the Ma-le'l Dunes Unit (2010, \$175,000) and for invasive *Spartina* eradication in the Refuge's tidal marshes (2008, \$57,000).

**PROJECT FINANCING**

**Phase I**

USFWS National Coastal Wetlands Conservation Grant	\$786,210
State Coastal Conservancy	\$413,790

**Phase I Total** **\$1,200,000**

**Phase II**

USFWS Deferred Maintenance Funds	\$300,000
USFWS National Coastal Wetlands Conservation Grant	\$163,790
State Coastal Conservancy	\$86,210
To Be Determined	\$250,000-\$1,050,000

**Phase II Total** **\$800,000-1,600,000**

**Project Total** **\$2,000,000-\$2,800,000**

Phase I of the project is estimated to cost \$1,200,000, which will be funded through a combination of the USFWS National Coastal Wetland Conservation Program grant funds, and the Conservancy’s required matching funds for that grant. As discussed in the “Project Description” section above, funds that have been secured to date are sufficient for the implementation of Phase I of the project and a portion of Phase II. Partial implementation of Phase II would involve the restoration of tidal wetlands that included a smaller area of marshes, as less sediment would be imported to the project area. Conservancy staff, the grantee and other project partners will endeavor to secure additional funds before 2016 to allow for full implementation of Phase II.

The anticipated source of Conservancy funds is the 2012-2013 fiscal year appropriation to the Conservancy from the Habitat Conservation Fund (“HCF”) established by the California Wildlife Protection Act of 1990 (Proposition 117), Fish and Game Code §2780 *et seq.* Pursuant to Fish and Wildlife Code Section 2786(d), HCF funds may be used for restoration or enhancement of wetlands. The Project will restore tidal marsh and associated wetland habitats, including habitat for endangered tidewater goby. Thus, the proposed project is an appropriate use of HCF funds.

The 2012-13 appropriation of HCF funds comes from the sale of bonds from the Disaster Preparedness and Flood Protection Bond Act of 2006 (Proposition 1E). Proposition 1E authorizes the use of these funds for the purposes of carrying out disaster preparedness and flood prevention projects (Section 5096 of the Public Resources Code). Section 5096.825(d) of the bond act states that these funds may be spent for the protection, creation, and enhancement of flood protection corridors. Consistent with this provision, the project will reduce the threat from

flooding to the Highway 101-Tompkins Hill Road interchange through restoration actions that will also benefit fish and wildlife habitat. The restored marsh would absorb wave energy, reducing the threat of storm damage and flooding to adjacent infrastructure.

Section 5096.820(b) stipulates that Proposition 1E funds should be expended on projects that secure the maximum feasible amounts of federal and local matching funds. Consistent with this requirement, significant federal matching funds have been secured, and local assistance with sediment hauling costs is anticipated.

The USFWS has awarded \$1,000,000 to the Conservancy for Project implementation, contingent on compliance with the National Environmental Protection Act (NEPA). Approximately \$950,000 of the grant will support project implementation directly, while the remaining \$50,000 would pay for Conservancy staff costs. In addition, the HBNWR has been granted \$300,000 in deferred maintenance funds by the USFWS which will be directed towards implementation of Phase II of the Project. Additional sources of funding may include the Wildlife Conservation Board, the Natural Resources Agency's Environmental Enhancement and Mitigation grant program, State Parks' Habitat Conservation Fund grant program, and the USFWS Section 6 Recovery Act Program.

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

The proposed project is undertaken pursuant to Chapter 5.5 of Division 21 of the Public Resources Code (Section 31220) and pursuant to Section 31113, as follows:

Pursuant to Section 31220(a) and 31220(b), the Conservancy may undertake projects to protect and restore coastal habitats section if the project "protects or restores fish and wildlife habitat within coastal and marine waters and coastal watersheds" or "restores coastal wetlands, riparian areas, floodplains, and other sensitive watershed lands, including watershed lands draining to sensitive coastal or marine areas." Consistent with this section, the proposed project will result in the restoration of tidal marshes that provide habitat for fish and wildlife, including listed species, in Humboldt Bay and protect wetland and floodplain areas adjacent to Highway 101.

The Conservancy has consulted with the State Water Resources Control Board in the development of the project to ensure consistency with Chapter 3 of Division 20.4 of the Public Resources Code regarding water quality. (See Exhibit 5, Project Letters). Consistent with Section 31220(c), the proposed project includes a monitoring and evaluation component, as reflected in the MMRP and is consistent with applicable and relevant Integrated Regional Water Management programs, local watershed management plans, and water quality control plans adopted by the state or regional water quality control boards, as discussed in the "Required Criteria" and "Consistency with Local Watershed Management Plan/State Water Quality Plan" sections below. In addition, HBNWR staff continuously monitor the Refuge for changes in its function.

This project is also consistent with Section 31113, which provides that "the Conservancy may undertake projects within its jurisdiction, including, but not limited to, those that reduce greenhouse gas emissions, address extreme weather events, sea level rise, storm surge, beach and bluff erosion, salt water intrusion, flooding and other coastal hazards that threaten coastal communities, infrastructure and natural resources." This project would provide protection for

natural resources within the WSU and for the Tompkins Hill Rd-Highway 101 interchange from erosion, sea level rise and storm surge impacts.

**CONSISTENCY WITH CONSERVANCY'S 2012 STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):**

Consistent with **Goal 5, Objective 5B** of the Conservancy's 2012 Strategic Plan, the proposed project would restore 56 acres of coastal wetlands.

Consistent with **Goal 7, Objective 7D** of the Conservancy's 2012 Strategic Plan, the proposed project would implement an adaptation pilot project to reduce hazards from sea level rise and extreme storm events while protecting natural resources and maximizing public benefits.

**CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA & GUIDELINES:**

The proposed project is consistent with the Conservancy's current Project Selection Criteria and Guidelines 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. **Promotion and implementation of State plans and policies:** The Project will help implement two priority actions identified in the 2014 *California Water Action Plan* (CWAP):

Action 4: Protect and Restore Important Ecosystems. The Project will implement this action by restoring tidal marsh in an estuary that provides valuable fish and wildlife habitat.

Action 8: Increase Flood Protection. The CWAP calls for action to address flooding threats due to aging levee infrastructure and sea level rise due to climate change. The Project will implement this action by restoring tidal marsh in an area currently protected by severely eroded dikes, providing protection for the Tompkins Hill Road-Highway 101 Interchange from flooding and storm damage that will increase with sea level rise.

The Project will implement a Management Measure identified in the *California Nonpoint Source Pollution Control Program* prepared by the State Water Resources Control Board in 2000: MM6B- Restoration of Wetlands and Riparian Areas. The Project will further the following goal of the *California Wildlife Action Plan*, prepared by the California Department of Fish and Wildlife in 2007: Federal, state, and local agencies, nongovernmental conservation organizations, and private landowners should protect and restore under-protected and sensitive habitat types. The Project would help implement the following tasks identified in the *Recovery Strategy for California Coho Salmon*, prepared by CDFW in 2004:

- Eureka Plain Task 2: Work with agencies and landowners, to re-establish estuarine function.
  - Eureka Plain Task 10: In cooperation with willing landowners, restore and maintain historical tidal areas, backwater channels and salt marsh.
  - Rangewide-Estuarines Task 2: Restore estuarine and associated wetland ecosystems.
4. **Support of the public:** The project is broadly supported by the public. See Exhibit 5 for letters of support.
  5. **Location:** The proposed project would be located within the coastal zone of Humboldt County.
  6. **Need:** The IS/MND must be certified now to facilitate permitting which will allow for project construction to begin in summer 2015. Conservancy funding is needed to implement the project in a timely fashion. If construction is delayed, additional dike failures may occur in the Project Area, which would increase project costs significantly or make implementation infeasible.
  7. **Greater-than-local interest:** The proposed project will lead to the restoration of tidal marsh in Humboldt Bay, which provides plant and wildlife habitat of regional and statewide importance for resident and migratory species.
  8. **Sea level rise vulnerability:** Project planning has considered sea level rise vulnerability. The placement of fill at White Slough would increase resiliency to sea level rise by providing protection for wetlands and roads from inundation.

**Additional Criteria**

9. **Urgency:** Restoration of White Slough is urgent because the dikes protecting the restoration area are severely eroded. A section of dike failed in August 2014 and is currently patched with an AquaDam. Additional sections of dike could fail at any time, making the project more costly or infeasible.
10. **Resolution of more than one issue:** The project would restore valuable fish and wildlife habitat, while providing protection for roads from sea level rise.
11. **Leverage:** The project leverages significant in-kind contributions from the US Fish and Wildlife Service in the form of staff time for restoration design.
12. **Innovation:** The White Slough Restoration would be the first demonstration of beneficial reuse of sediment in the Humboldt Bay region.
13. **Readiness:** The USFWS has committed staff to restoration planning for these projects and is ready to move forward with additional permitting and final design.
14. **Realization of prior Conservancy goals:** See “Project History” above.
15. **Vulnerability from climate change impacts other than sea level rise:** Selection of species for the restoration planting palette will be designed to enhance resiliency to climate change, which may result in changes in precipitation and fog patterns as well as increased temperatures.

16. **Minimization of greenhouse gas emissions:** Restoration planning will attempt to minimize the transportation and cut and fill requirements for implementation, which are expected to be sources of greenhouse gas emissions from the project. Minimization measures include selecting sediment sources located as close as possible to the project area (e.g. Bear River Casino and Martin Slough sites will be preferred over Salt River and Samoa), and using trucks with transfer trailers attached to reduce the number of truck trips required. The estimate for construction-related emissions for the project, primarily resulting from hauling sediment, is 945 tons of CO<sub>2</sub>-equivalent. Restored tidal marsh is expected to sequester more carbon than existing habitats. The Project will convert 25 acres of brackish marsh to salt marsh. This conversion will reduce the potential for the project area to emit methane in the short term, as brackish marshes have a high potential for methane emissions, and salt marsh has a low potential for methane emission. In the long term, without project implementation, the perimeter dike and temporary coffer dam would fail and the entire 40 acre West Unit subarea would convert to mudflat. Therefore, the long-term effect of the project is a net decrease in greenhouse gases due to increased carbon sequestration of the restored tidal marsh.

**CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:**

The Humboldt Bay Area Plan (HBAP) of the Humboldt County Local Coastal Program (LCP), certified by the California Coastal Commission in 1982, supports planning to protect and enhance environmentally sensitive habitats, such as coastal marshes and dunes. The HBAP cites Public Resources Code Section 30240(a), a provision of the California Coastal Act, which states that “environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values” (HBAP Section 3.30, p. 38). In addition, the HBAP stresses the tremendous value of salt marsh, brackish marsh, dunes, and other natural habitats for fish and wildlife in Humboldt Bay (HBAP, Section 3.30(A), pp.39-40). The project will result in the restoration of coastal wetlands in Humboldt Bay. Therefore, the project is entirely consistent with the policies of the HBAP of the Humboldt County LCP, as discussed above.

**CONSISTENCY WITH LOCAL WATERSHED MANAGEMENT PLAN/  
STATE WATER QUALITY CONTROL PLAN:**

The project is consistent with, and furthers the goals of, the *Humboldt Bay Management Plan* (HBMP), prepared in May 2007 by the Harbor District. The HBMP expresses support for the goals of the proposed project in the following statement:

Salt marshes in the Bay have been reduced substantially in area with respect to their pre-settlement extent, and they continue to be lost. In addition, the extant salt marshes are degraded by the dominant presence of dense-flowered cordgrass. The benefits of shoreline-protecting salt marshes for stabilizing sediment and protecting shoreline structures from wave impacts combine with a conservation focus on maintaining or restoring salt marshes to make the restoration or enhancement of salt marshes an important concern for the District. (HBMP, p.129)

The proposed project is consistent with Objective CAS-3: “Maintain and enhance habitat for sensitive species” (HBMP, p.204), in that it will lead to the protection and restoration of habitat

for Point Reyes bird's beak and Humboldt Bay Owls Clover, both listed as endangered by the California Native Plant Society.

The project is consistent with, and furthers the goals of, the Humboldt Bay Watershed Salmon and Steelhead Conservation (HBSSC) Plan, prepared by the Humboldt Bay Watershed Advisory Committee in March 2005. The HBSSC Plan highlights the importance of the Bay's tidal marshlands in supporting salmon populations, as well as diverse communities of fish and wildlife (p.11). The HBSSC Plan notes that estuarine habitat is necessary for the survival of salmon and that this habitat "has been significantly reduced by construction of levees and tidegates, and placement of fill" (HBSSC Plan, p.viii). One of the stated goals of the HBSSC Plan is to "Maintain and restore estuary processes that benefit salmonids" (HBSSC Plan, p.ix). The proposed project would further this goal by restoring tidal marshes, as discussed above in the "Project Summary" section.

The proposed project is consistent with the Water Quality Control Plan for the North Coast (adopted by the Regional Water Quality Control Board North Coast Region in 1988 and last updated in 2007) in that it will enhance wildlife habitat, habitat for rare, threatened and endangered species, and estuarine habitat in Humboldt Bay. The Water Quality Control Plan for the North Coast designates wildlife habitat, rare, threatened, and endangered species habitat, and estuarine habitat as beneficial uses of Humboldt Bay (Water Quality Control Plan for the North Coast, Table 2-1, pp. 2-8 to 2-12).

The project is consistent with HBNWR's Comprehensive Conservation Plan (CCP), adopted by USFWS in 2009. This project will achieve the CCP's specific goal of restoring tidal influence and marshes with a full continuum of salinities to the WSU.

#### **COMPLIANCE WITH CEQA:**

As a California public agency with jurisdiction in the Project Area and the first agency to take action to support project implementation, the Conservancy is the lead agency under the California Environmental Quality Act (CEQA), responsible for evaluating the potential environmental effects of implementing this project. Accordingly, Conservancy staff prepared the IS/MND with the assistance of Trinity Associates and the USFWS.

The IS/MND analyzes the implementation of the current design of the proposed Project. A Notice of Intent to Adopt Proposed Mitigated Negative Declaration and a Notice of Completion for the IS/MND was issued for agency and public review and sent to the State Clearinghouse on February 9, 2015 to announce the availability of the document and the 30-day review period. The Draft IS/MND was available online at [scc.ca.gov](http://scc.ca.gov), and copies of the IS/MND were made available at the Humboldt County Library in Eureka, and at the Conservancy offices in Oakland. The Conservancy received no public comment letters or emails on the Draft IS/MND.

The Final IS/MND consists of two volumes: Volume 1) the Initial Study Mitigated Negative Declaration, which includes the CEQA-required information and analysis, and Volume 2) the Mitigation Monitoring and Reporting Program. (See Exhibit 4).

#### **Significant Effects Reduced To Less Than Significant Levels by Mitigation**

The IS/MND provides a detailed analysis of potential environmental impacts and proposed mitigation measures to address the possible impacts associated with implementation of the Plan (See Exhibit 4, IS/MND). The IS/MND identified possible significant effects of the project in the

areas of Biological Resources, Hazards/Hazardous Materials, Hydrology/Water Quality, and Noise. Mitigation measures identified in the IS/MND would reduce all of these impacts to a less than significant level.

The major adverse environmental impacts of the restoration project and the associated mitigation measures result from the construction activities associated with the restoration and are summarized below.

### ***Biological Resources***

#### **1. Impacts to special status fish species from increased turbidity or direct impact.**

*Mitigation:* Construction will only occur between July 1st and October 31st when freshwater discharge into Chism Creek is at its lowest and when the ground surface is dry. Construction during this period will provide tidewater goby, if present, the opportunity to ascend the existing creek channel. Installation of temporary block nets or fish screens in the tidal channels and Chism Creek will occur prior to all diversions or dewatering of any wetted channels, where work is to occur to isolate and facilitate relocating any fish or amphibians. Relocation of fish and amphibians using electrofishing, seines, and dipnets will be coordinated with DFW and USFWS staff, as appropriate. During and immediately after de-watering, an authorized fish biologist will conduct a survey of the areas being de-watered for stranded fish or amphibians. Any stranded fish or amphibians will be collected, recorded, and relocated to adjacent waters with appropriate habitat conditions. Aquatic habitat will be impacted by pumping for the shortest time necessary to complete construction or excavation. Pumps used to de-water work areas will utilize a fish screen on the inlet of sufficiently sized mesh to prevent entrainment of tidewater goby.

**2. Impacts to breeding birds.** *Mitigation:* Surveys by a qualified biologist for nesting birds 1,000 feet beyond the limits of disturbance will occur two weeks prior to commencement of ground-disturbing activities. If breeding is confirmed of any special status birds, construction activities that would degrade or remove breeding habitat will not occur in the immediate vicinity until the end of the breeding period for that species or until the breeding effort has either been determined to have failed or the young have been determined to have fledged.

**3. Impacts to special status plant species.** *Mitigation:* Survey for special status plants during pre-project spring surveys, flag locations and instruct crews to avoid where feasible. If populations of these plants cannot be avoided during excavation or grading they will be removed as “wafers” (top 12 inches of vegetation/topsoil) and either transplanted immediately or stored separately on pond liners. These soils will be kept moist until they are placed at the appropriate finished grade and in the same orientation, or transplanted to another area of suitable habitat on the Refuge.

**4. Impacts to red-legged frogs and Northwestern pond turtles.** *Mitigation:* Surveys of aquatic habitat by a qualified biologist for juvenile red-legged frogs and pond turtles will occur two weeks prior to disturbance activities in the areas to be de-watered. Any red-legged frogs found will be relocated to suitable areas outside of the area of disturbance. Construction activities in pasture in the West Unit Area will occur only when the area is dry and when adult red-legged frogs are not expected to be present. Surveys will locate and flag northwestern pond turtle nests with eggs, or remove hatchlings and adults that may be present. Any active nests located will be left undisturbed until hatchlings have emerged or have been relocated to suitable areas outside of the area of disturbance, similarly relocation of any adults found will occur.

**5. Impacts to wetlands.** *Mitigation:* To minimize disturbances to the existing marsh, work will be phased as described in the Project Description. Impacts will be minimized by not placing fill in open waters, with the exception of several reaches of agricultural drainage ditches, and by maintaining a 20-foot buffer between open water and fill areas. If required, dewatering will be performed to limit work to dry areas. Construction best management practices will be followed to prevent sediment entering open waterways. Project Area wetlands are threatened with conversion to mudflat when dikes fail. Ultimately, the project will restore or enhance 56 acres of wetlands, mitigating temporary impacts to wetlands in the Project Area.

**6. Impacts to eelgrass.** *Mitigation:* Increased turbidity that could impact eelgrass will be minimized by not placing fill in open waters, with the exception of several reaches of agricultural drainage ditches, and by maintaining a 20-foot buffer between open water and fill areas. If required, dewatering will be performed to limit work to dry areas. Construction best management practices will be followed to prevent sediment entering open waterways.

### ***Hazards/Hazardous Materials***

**1. Chemical and motor fuel spills.** *Mitigation:* Heavy equipment that will be used in the Project will be in good condition and will be inspected for leakage of coolant and petroleum products and repaired, if necessary, before work is started. Equipment operators will be trained in the procedures to be taken should an accident occur. Prior to the onset of work the contractor will prepare a plan for the prompt and effective response to any accidental spills. Absorbent materials designed for spill containment and cleanup will be kept at that Project site for use in case of an accidental spill. Stationary equipment will be positioned over drip pans.

**2. Fire hazard.** *Mitigation:* All internal combustion engines will be fitted with spark arrestors. The contractor will have an appropriate fire extinguishers and fire fighting tools present at all times when there is a risk of fire. Vehicles will not be parked in tall grass or any other location where heat from the exhaust system could ignite a fire.

### ***Hydrology / Water Quality***

**Short term turbidity increases.** *Mitigation:* Construction will only occur between July 1<sup>st</sup> and October 31<sup>st</sup> when the ground surface is dry to reduce the chance of stormwater runoff occurring during construction and when there is very little freshwater flowing in Chism Creek. Excavated materials will not be stockpiled overwinter. Sediment control measures will be in place while materials are being stockpiled to minimize sediment and pollutant transport from the Project site. Placement of fill in the Project Area will occur when the area is not inundated by tide water. A silt fence will be installed around the perimeter of temporary stockpiles of saturated soils to prevent runoff from leaving the site. A silt fence will be deployed to isolate work areas from existing channels, and to trap suspended sediment that might leave the construction site if stormwater runoff were to occur. If the silt fence is not adequately containing sediment, the construction activity will cease until remedial measures are implemented that prevent sediment from entering the waters below. Disturbed areas will be treated for erosion after excavation and grading are completed. No construction materials, debris, or waste, will be placed or stored where it may be allowed to enter into or be placed where it may be washed by rainfall into waters of the U.S./State. All temporary fill, synthetic mats and silt fences will be removed from

wetlands and waters of the U.S./State immediately on cessation of construction. Biodegradable geotextile fabrics will be used, where possible. Additional best management practices will be implemented to prevent entry of storm water runoff into the excavation site, the entrainment of excavated contaminated materials leaving the site, and to prevent the entry of polluted storm water runoff into coastal waters during the transportation and storage of excavated contaminated materials.

### *Noise*

#### **1. Noise impacts to workers, residential areas, and to the College of the Redwoods.**

*Mitigation:* Workers will be required to wear hearing protection when in the vicinity of or while operating equipment producing noise levels equal to or greater than 85 db. Hours of construction for outdoor activities exceeding 50 dBA will be limited to Monday through Friday 7:00 a.m. to 7:00 p.m. and weekends and holidays from 9:00 a.m. to 6:00 p.m. If sediment is transported from the Harbor District dewatering facility in Samoa on the North Spit of Humboldt Bay, it may be necessary to haul material after 7:00 p.m. or before 7:00 a.m. to minimize traffic impacts. Hauling outside of the designated hours above will be minimized to the extent feasible. All equipment will operate with factory-equipped mufflers, and staging areas will be located as far from residential uses as is practical. A haul-truck route plan will be developed. Hauling will minimize passing any substantial collection of noise-sensitive land uses (i.e. occupied houses, schools, hospitals). Larger capacity belly- and end-dump trucks as well as double-trailers will be used whenever feasible to minimize the number of truck trips necessary. Construction personnel will conduct all work activities in a manner that minimizes noise generation. A variety of contractor actions are available that will reduce construction noise, including: i) turning off engines on all construction equipment not in active use, ii) shielding noisy equipment with less noisy equipment, and iii) avoiding high RPM engine operation when possible.

#### **Mitigation Monitoring and Reporting Program**

Under CEQA, whenever measures are required and adopted in order to mitigate or avoid the significant effects on the environment of an approved project, the agency must also prepare and adopt a Mitigation Monitoring or Reporting Program (MMRP) designed to ensure compliance with the required mitigation during project implementation (CEQA § 21081.6). An MMRP for this project has been prepared and is incorporated in the IS/MND, attached as Exhibit 4 to this staff recommendation.

Based on the foregoing and on the extensive analysis contained in the IS/MND, staff recommends that the Conservancy adopt the proposed CEQA findings provided in the resolution. The findings conclude that the Conservancy has undertaken an independent review of the environmental effects of the Project, as required by CEQA. The Project, as modified by incorporation of the mitigation measures identified in the IS/MND, will avoid, reduce, or mitigate all of the possible significant environmental effects of the project on these resource areas to a level that is less than significant. Based on the record as a whole, there is no substantial evidence that the implementation of the White Slough Restoration Project, as mitigated, will have a significant effect on the environment.

Finally, upon Conservancy adoption of the IS/MND, Conservancy staff will prepare and file a Notice of Determination.