COASTAL CONSERVANCY

Staff Recommendation
March 26, 2015

HUMBOLDT BAY DUNES AND MARSH RESTORATION

Project No. 08-010-04
Project Manager: Joel Gerwein

RECOMMENDED ACTION: Authorization to accept $75,000 in grant funds from the National Fish and Wildlife Foundation, and disburse up to $25,434 of these funds to the Friends of the Dunes and up to $47,075 of these funds to the Redwood Community Action Agency to implement the Humboldt Bay Dunes and Marsh Restoration Project.

LOCATION: Arcata Bay, Unincorporated Humboldt County

PROGRAM CATEGORY: Integrated Coastal & Marine Resources Protection

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EXHIBITS

Exhibit 1: Project Location

Exhibit 2: Site Photographs

Exhibit 3: Project Letters

Exhibit 4: Initial Study Negative Declaration for the Dunes Restoration Project Component

Exhibit 5: April 18, 2013 Conservancy Staff Recommendation: -Adoption of and Certification of the Final Programmatic Environmental Impact Report for the Humboldt Bay Regional Spartina Eradication Plan

Exhibit 6: CEQA Checklist for the Marsh Restoration Project Component

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RESOLUTION AND FINDINGS:

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

"The State Coastal Conservancy hereby authorizes the acceptance of $75,000 (seventy five thousand dollars) in grant funds from the National Fish and Wildlife Foundation (NFWF), and the disbursement of up to $25,434 (twenty five thousand four hundred thirty-four dollars) to the Friends of the Dunes ("FOD") and $47,075 (forty seven thousand seventy-five dollars) to the Redwood Community Action Agency (RCAA) to implement the Humboldt Bay Dunes and

Marsh Restoration Project (Project) on approximately 100 acres of coastal dunes and tidal marsh adjacent to Arcata Bay (Exhibit 1). This authorization is subject to the following conditions:

1. Prior to initiating work on or disbursement of any funds for their respective components of the Project, FOD and RCAA shall each 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. An agreement of the landowner of any land on which the Project work will occur by which the landowner authorizes the work and entry onto the land for purposes of implementing the work and post-implementation monitoring and inspection.
2. In implementing the Humboldt Marsh Restoration component of the Project, RCAA shall ensure compliance with all applicable mitigation measures and monitoring and reporting requirements for the project that are identified in the "Final Programmatic Environmental Impact Report for the Humboldt Bay Regional *Spartina* Eradication Plan" (FEIR) and in the Mitigation Monitoring and Reporting Program certified and adopted by the Conservancy at its April 18, 2013 meeting, or in any permits, approvals or additional environmental documentation required for the project.
3. In implementing the Humboldt Bay Dunes Restoration component of the Project, FOD shall ensure implementation of and compliance with all aspects of the Project as described in the "Initial Study Negative Declaration for the FOD Coastal Development Permit, Conditional Use Permit, and Lot Line Adjustment" (ND), or in any permits, approvals or other 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 authorization is consistent with the purposes and objectives of Chapter 5.5 of Division 21 of the Public Resources Code, regarding integrated coastal and marine resource protection projects.
3. The Conservancy has independently reviewed and considered the information contained in the ND pursuant to its responsibilities under CEQA (CEQA Guidelines, 14 California Code of Regulations, Section 15090). The ND identifies no potentially significant effects from implementation of the dunes restoration component of the Project.
4. The Conservancy has identified the environmental impacts associated with the Humboldt Bay Marsh Restoration component of the Project and the mitigation measures needed to reduce or avoid those effects, all of which were fully identified and considered in the programmatic FEIR. There are no new additional or more severe environmental impacts associated with this component of the Project beyond those previously considered by the FEIR and there is no need for new or additional mitigation measures to reduce or to avoid the impacts of the Project.

5. There is no substantial evidence that the implementation of the Project, as mitigated, will have a significant effect on the environment.
6. FOD and RCAA are nonprofit organizations existing under section 501(c)(3) of the U.S. Internal Revenue Code, and whose purposes are consistent with Division 21 of the Public Resources Code."

PROJECT SUMMARY:

Staff recommends that the Conservancy authorize the acceptance of $75,000 in grant funds from NFWF and the disbursement of up to $25,434 to FOD and up to $47,075 to RCAA to carry out the Humboldt Bay Dunes and Marsh Restoration Project (Project). The Project will further restoration efforts on 71.5 acres of coastal dunes and 30 acres of tidal marshes, while enhancing public understanding of the value of these habitats. The Project includes the following components:

Dune Restoration

1. Removing the following invasive plants from Friends of the Dunes (FOD), Bureau of Land Management (BLM), and US Fish and Wildlife Service (USFWS) coastal dunes properties on the North Spit of Humboldt Bay (Exhibit 1): Yellow bush lupine (50 acres), Ice plant (20 acres), Annual grasses (1 acre).
2. Initial restoration of 0.50 acres of foredune at FOD's Humboldt Coastal Nature Center by hand removal of European beachgrass. Removal of European beachgrass is labor intensive, requiring multiple re-treatments of an area to deplete energy stores in the roots, and fully eradicate the grass. Once the grass has been eliminated from the 0.50 acre area, 150 native beachgrass (*Elymus mollis*) plugs will be planted along the western side of the foredune. The majority of this work will be completed by two restoration interns. The California Conservation Corps (CCC) will assist in removing piles of beachgrass from the property and transporting to a green waste facility, as well as spending one day digging up culms of native beachgrass to transplant at the restoration site. Volunteers will also be involved.

Marsh Restoration

3. Removal of invasive denseflowered cordgrass (*Spartina densiflora*) from 30 acres of the Eureka Slough Unit in the USFWS Humboldt Bay National Wildlife Refuge (HBNWR).

Education and Volunteer Outreach

4. FOD and RCAA will work together to organize 24 volunteer workdays. Volunteers will utilize manual methods (shovels, pulaskis, and digging bars) to remove invasive plants from coastal dunes and tidal marshes around Humboldt Bay.
5. FOD will provide environmental education regarding the value of tidal marshes and coastal dunes to over 1,000 schoolchildren through its Bay to Dunes Program.

All of the Project sites (FOD, BLM and USFWS) have ongoing, multi-year restoration projects to which this Project will contribute. The landowners are all members of the Humboldt Bay Dunes Cooperative and the Humboldt Bay Regional Invasive Spartina Eradication Working Group, a multi-stakeholder group that works to achieve ecosystem-level goals. The project area is protected in perpetuity, and managed for habitat, open space, and public access by a number of federal, state, and local agencies. These projects will contribute to achievement of continuous stretches of restored marsh and dunes, reducing fragmentation and improving the viability of the individual restoration efforts.

Restoration of Humboldt Bay native communities is a high conservation priority. 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 is a complex ecosystem and valuable resource for California and the nation due to its natural and economic resources, and its recreational opportunities. Humboldt Bay biota are diverse and ecologically significant at scales ranging from local fisheries to hemispheric shorebird and waterfowl migration. The Bay and its wetlands host over 260 native 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.

Diking and filling have resulted in the loss of approximately 90% of Humboldt Bay's historic salt marshes. The few remaining marshes have been further degraded by agricultural and urban runoff, industrial development, and invasive species infestations. Restoration and enhancement of remaining marshes is therefore critical to not only sustain populations of more common plants and wildlife, but recover federally listed species, such as Southern Oregon/Northern California Coast Coho salmon, California Coastal Chinook salmon, Northern California steelhead, and tidewater goby. Removal of invasive Spartina from tidal marshes will restore valuable biodiversity and ecosystem processes, and reduce a major threat to the marshes in Humboldt Bay and other West Coast estuaries. *Spartina densiflora* is designated a red-alert species with High ecological impact rating in the California Invasive Plant Inventory, a priority management species for the HWMA, and a Noxious Weed by the California Department of Food and Agriculture. A report on the state of California's wetlands ranked *Spartina* as the top threat to the biological value of California's North Coast wetlands[1], and specifically Humboldt Bay[2]. Spartina degrades estuarine habitat by excluding native salt marsh plants, altering the benthic macroinvertebrate community,[3] reducing net primary productivity[4], and potentially transforming mudflats to salt marsh. It threatens to undermine tidal marsh restoration projects like the McDaniel Slough Restoration by turning restored marshes into monocultures. A dispersal study conducted by Portland State University demonstrated that Humboldt Bay's Spartina population is a potential source of seeds and vegetative propagules that could colonize marshes up and down

[2] Sutula M, Collins JN, Wiskind A, et al. 2008. Status of Perennial Estuarine Wetlands in the State of California. Final Report to the Surface Water Ambient Monitoring Program.

[3]Mitchell, M.L. 2012. A Comparison of Terrestrial Invertebrate Communities in Spartina-Invaded And Restored Humboldt Bay Salt Marshes. Master's thesis, Humboldt State University, Arcata, CA.

[4] Lagarde, L. 2012. Invasive Spartina densiflora Brongn. Reduces Primary Productivity in a Northern California Salt Marsh. Master's thesis, Humboldt State University, Arcata, CA.

the coast.[5] Invasive Spartina has been recognized as a major threat to estuarine biodiversity by the West Coast Governor's Alliance (WCGA) on Ocean Health, and the 2010 WCGA Action Plan prioritizes the coastwide eradication of invasive Spartina by 2018. Eradication of the Humboldt Bay population is a key action to meet this goal.

Spartina will be removed using a combination of methods, primarily top mowing and maceration of rhizomes by brushcutting or rototilling. These methods have been tested and refined in Humboldt Bay over the last ten years. RCAA will provide technical assistance and/or labor for Spartina removal areas which are either difficult to access or require specialized experience with brushcutters/tillers.

The biodiversity and resource values of Humboldt Bay's dunes have been well documented. The North Spit coastal dunes support over 40 species of native bees, over 200 plant species, and over 250 species of birds. At the local level (through the Humboldt County Coastal Plan) and at the eco-regional level (through The Nature Conservancy) the dunes have been identified as a high priority for conservation. Coastal dunes account for less than 3% of the northern California landscape. This small fraction of the landscape has suffered disproportionately from human impacts including development and the spread of invasive plant species. Although impacted by invasive plants, the North Spit of Humboldt Bay contains arguably the most pristine coastal dune system remaining in North America. Removal of invasive dune plants will create habitat for native dune species, including three federally endangered species, Humboldt Bay wallflower, beach layia, and the Western Snowy Plover. Northern red-legged frog, a State listed species of concern, inhabits the wetland swales, which also serve as stop-over areas for neotropical songbirds migrating between breeding and winter grounds. European beachgrass, yellow bush lupine, iceplant, and annual grasses degrade coastal dune ecosystems by excluding native plants, stabilizing dynamic dunes and thus reducing their naturally high species diversity, and increasing nitrogen content of dune soils, thereby facilitating invasion by other non-native species.[6]

The FOD component of this Project is part of a larger effort to complete restoration of the entirety of FOD's foredune. Initial work has begun with 3 acres restored on the foredune on their property. This grant will fund restoration of an additional 0.5 acres of beachgrass, with an additional 7.5 acres to be funded by a Caltrans mitigation grant. Together, these grants will fund the complete restoration of FOD's foredune by the end of 2017, completing restoration of a continuous 4-mile stretch of foredune. Work crews and volunteers will utilize manual methods (shovels and hand removal) to remove invasive plants. The work would occur on the FOD Humboldt Coastal Nature Center property and on adjacent dune preserves.

In addition to European beachgrass, other invasive plants targeted by coastal land managers for removal are ice plant, yellow bush lupine and a suite of annual grasses. Like European beachgrass, these invasives all crowd out native plants, overstabilize dune features and some change soil properties by adding nutrients. Removal of invasive yellow bush lupines in backdune areas is an ongoing priority. Its long lasting seed bank, up to 10 years, means areas need to be

[5] Vanessa H. Morgan and Mark D. Sytsma. 2013. Potential Ocean Dispersal of Cordgrass (Spartina spp.) from Core Infestations. Invasive Plant Science and Management 6:2, pp. 250-259.

[6] Pickart, A.J., L.M. Miller, and T.E. Duebendorfer. 1998. Yellow Bush Lupine Invasion in Northern California Coastal Dunes I. Ecological Impacts and Manual Restoration Techniques. Restoration Ecology 6:1, 59-68

repeatedly treated each spring until the seed bank is depleted. Ice plant is spread by various animals, and maintenance is needed to keep it out of restored areas. Annual grasses are a newer target for land managers and have been mapped and monitored on the entire North Spit of Humboldt Bay, with occurrences in foredune areas prioritized for treatment. Research conducted at the HBNWR[7] has demonstrated the importance of treatment of invasive annual grasses, especially in foredune and adjacent wetland areas.

FOD's Bay to Dunes Education program will provide field trip programs to at least 1,000 3rd-6th graders. The program includes a pre-field trip classroom presentation with a colorful PowerPoint presentation. This grant will help fund an update of the PowerPoint program to include information about invasive *Spartina densiflora* as well as to train volunteers on how to present the new material to students. The presentation to students is followed by hands-on activities to prepare students for their site visit. On field trip day, classes are broken up into smaller groups of 8-12 and led by a trained guide through a variety of fun and educational activities focusing on bay and dunes habitats. At the bay, they dip net for invertebrates, frogs and salamanders in the freshwater marsh, explore the salt marsh with "bug boxes" and binoculars, dig in the bay mud for worms and clams, play predator-prey and create a web of life. In the dunes, they get an opportunity to pull invasive European beachgrass, identify animal tracks, learn how the sand moves to form the dunes, use field guides to identify plants and have some free time at the beach. The program fosters understanding of, and appreciation for, dune and marsh habitats.

FOD and RCAA have been coordinating invasive plant removal and native habitat restoration efforts around Humboldt Bay for many years, and are highly qualified to carry out the Project.

Site Description:

Marsh restoration for this project will occur on 30 acres of HBNWR's Eureka Slough Unit. The Eureka Slough Unit is ~86 acres in size and preserves the relatively small remnant of the slough's historic salt marsh occurring west of Highway 101 (Exhibit 1). Approximately 70 acres of the Unit was infested with Spartina until removal efforts began in 2013. Spartina has been removed from approximately 25 acres of the Unit to date, and native marsh plants such as pickleweed, saltgrass, and arrowgrass are increasing in cover in treated areas.

Dune restoration will occur on 71.5 acres on the Upper North Spit of Humboldt Bay on property owned by the USFWS, BLM, and FOD (Exhibit 1). The Project Area includes nearshore dunes targeted for removal of iceplant, annual grasses, and European beachgrass, as well as portions of the backdunes targeted for removal of yellow bush lupine. The nearshore dunes support foredune grassland, dune mat, open sand dunes, and seasonal dune wetlands (dune swales). Between the nearshore and stabilized forested dunes is a large sand sheet. The older stabilized dunes are colonized by red alder riparian forest, and maritime forest of beach pine, Sitka spruce, and grand fir.

Project History: Since the 1980s, the Coastal Conservancy has worked closely with the FWS, the Harbor District, and other stakeholders to protect and restore the fish and wildlife habitat of Humboldt Bay and adjacent dunes. The Conservancy has assisted with conservation

[7] Wiedemann, A. M. and A. J. Pickart. 2004. Temperate zone coastal dunes. Pages 53–65 in M. Martinez and N. Psuty, editors. Coastal dunes: ecology and conservation. Volume 171, Springer-Verlag, Berlin, Germany.

acquisitions, development of plans and habitat restoration techniques, implementation of restoration, and post-project monitoring.

History of Spartina Removal Efforts: In April 2003, the Conservancy provided funding to the FWS to undertake a pilot study of manual techniques for eradicating cordgrass in Humboldt Bay. In June 2006, the Conservancy provided $50,000 to apply the manual techniques tested in the 2003-2005 pilot project to a larger area (approximately 50 acres) of salt marsh within HBNWR. This project was completed in September 2008. In 2008, the Conservancy provided $60,000 in Proposition 84 bond funds and an additional $150,000 in federal Coastal Impact Assistance Program funds to prepare a regional eradication plan. In 2010, the HBNWR received a $1,000,000 grant to conduct research and technical studies and to eradicate *Spartina* from the Refuge, a project which is nearly complete. In 2011, the Conservancy funded the preparation of the PEIR with $20,000 in Proposition 84 bond funds and an additional $80,000 in federal funds awarded by the Pacific States Marine Fisheries Commission. In 2013, the Conservancy certified the FEIR for the project and provided $500,000 in Proposition 84 bond funds for Spartina removal efforts. In 2013 and 2014, the Conservancy assisted in securing an additional $420,000 in outside grant funding to the Harbor District for Spartina removal. In 2014, the Conservancy augmented its $500,000 grant with an additional $72,500 in funds granted by the USFWS for Spartina removal.

Public outreach has been ongoing through the planning and eradication project. The FWS, Conservancy, and other partners including the California Ocean Protection Council, the City of Eureka, the Friends of the Dunes, and Humboldt State University, co-sponsored *Spartina* Summits in 2008, 2010, and 2011 to share information about invasive *Spartina* and its control and to discuss management options for *Spartina* in Humboldt County. In addition, volunteer *Spartina* removal and native marsh revegetation days have been conducted by FWS.

History of Dune Protection and Restoration Efforts: In 1986 and 1987, the Conservancy provided funding to The Nature Conservancy to acquire what is now the FWS Lanphere-Christensen Dunes Unit (transferred to FWS with Conservancy approval in 1998). In 1990, the Conservancy granted $80,000 to the County of Humboldt to conduct an alternative uses study and prepare the Humboldt Beach & Dunes Management Plan with recommended planning activities. The Coastal Commission approved the preferred plan and in 1993 the County's General Plan was amended to incorporate by adoption the Humboldt Beach & Dunes Management Plan preferred alternatives. The Conservancy approved the Humboldt Beach & Dunes Management Plan on March 20, 1995. One of the plan's recommendations was public acquisition of properties on the north spit designated as NR for resource protection and public access. In 2003, the Conservancy funded (in part with a grant from the FWS National Coastal Wetlands Conservation Grant Program) the acquisition by the Center for Natural Land Management of approximately 202 acres of dune property, that now comprises a portion of the Ma-le'l Dunes Cooperative Management Area, to remove it from use for off-highway vehicle recreational use. The property was transferred to the BLM and FWS in 2005. In June 2006, the Conservancy authorized funding for the acquisition by FOD of the Stamps property for public use and the possible establishment of a coastal interpretive visitor center, and preparation of pre-acquisition / pre-construction feasibility and design planning. In July 2007, the acquisition was completed and since that time, the FOD has completed the construction of the Humboldt Coastal Center – Gateway to the Dunes education and visitor center. In 2007 and early 2008, the Conservancy completed the Ma-le'l Dunes CMA Access Management Plan and prepared a

mitigated negative declaration for public access improvements. In April 2008, the Conservancy approved the Access Management Plan and adopted the mitigated negative declaration, and authorized funding for the initial phase of access improvements at the Ma-le'l Dunes CMA, as well as authorizing funds for FOD to finalize designs and implement initial public access improvements to provide day-use coastal access at the Humboldt Coastal Center on the North Spit of Humboldt Bay. In October 2013, the Conservancy authorized $32,500 to FOD to develop an outreach and education program to attract more students, families, volunteers and visitors to the exploration of local coastal habitats and inspire new and more diverse audiences to engage in learning about and caring for coastal environments.

PROJECT FINANCING

National Fish and Wildlife Foundation	$75,000
Project Total	**$75,000**

Funding for this Project will be provided by NFWF through their Pulling Together Initiative Grant Program and has been awarded specifically for the Project work. $2,491.12 of the NFWF funds will pay for Conservancy staff time to manage the Project. The Conservancy is providing $62,260 in matching funds that were authorized in April 2013 and have already been expended for Spartina removal. RCAA is providing $12,740 in matching funds for project management that were expended in 2014. FOD is providing $37,500 in matching funds and in-kind volunteer work for the Project.

CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:

This project would be undertaken pursuant to Division 21, Chapter 5.5 (Integrated Coastal and Marine Resources Protection) of the Conservancy's enabling legislation (California Public Resources Code Section 31220), as described below.

Section 31220(a) of the Public Resources Code authorizes the Conservancy to undertake coastal watershed projects that meet one or more criteria detailed in subsections 1 through 10 of Section 31220(b). Consistent with Section 31220(b), the proposed project will achieve the following objectives: protect or restore fish and wildlife habitat within coastal and marine waters and coastal watersheds (subsection 2); reduce threats to coastal and marine fish and wildlife (subsection 3); and protect and restore wetlands and other sensitive watershed lands (subsection 6). Consistent with this section, the proposed authorization authorizes the use of funds to remove Spartina, iceplant, European beachgrass, invasive annual grasses, and yellow bush lupine, thereby restoring tidal marshes and coastal dunes around Humboldt Bay. Removing these invasives will also reduce the threats to fish and wildlife that utilize the region's dunes and marshes, as discussed in the Project Summary Section above.

Section 31220(a) requires the Conservancy to consult with the State Water Resources Control Board (SWRCB) in the development of a project to ensure consistency with Chapter 3 of Division 20.4 of the Public Resources Code. In keeping with this requirement, the Conservancy has consulted with the SWRCB to ensure the consistency of the project with the referenced section of the Public Resources Code.

Under Section 31220(c), Conservancy projects funded under this section must "include a monitoring and evaluation component" and be consistent with applicable Integrated Regional Water Management Programs, local watershed management plans, and water quality control plans adopted by the state or regional water quality control boards. The project will utilize effectiveness monitoring data and adaptive management principles to optimize control efforts on an ongoing basis. The consistency of this project with local and regional watershed and water quality plans is discussed in the "Consistency with Local Watershed Management Plan and Regional Water Quality Control Plan" section below.

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

Consistent with **Goal 5, Objective B** of the Conservancy's 2013-2018 Strategic Plan, the proposed project will enhance 71.5 acres of coastal dunes and 30 acres of tidal marsh.

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 October 2, 2014, 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 proposed project promotes or implements the following state plans or policies:
    - Action 4 identified in the 2014 *California Water Action Plan* (CWAP), which calls for the protection and restoration of important ecosystems. The Project will implement this action by restoring tidal marsh and coastal dunes in an estuary that provides valuable fish and wildlife habitat.
    - 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 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 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-Estuaries Task 2: Restore estuarine and associated wetland ecosystems.

- *The California Wetlands Conservation Policy* (1993), adopted by the California Natural Resources Agency through Executive Order W-59-93: "Ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California…"
- Invasive Spartina has been recognized as a major threat to estuarine biodiversity by the West Coast Governor's Alliance (WCGA) on Ocean Health, and the *2010 WCGA Action Plan* prioritizes the coastwide eradication of invasive Spartina by 2018. This Project will further that goal.

4. **Support of the public:** The project enjoys broad public support (Exhibit 3).
5. **Location:** The proposed project would be located within the coastal zone of Humboldt County.
6. **Need:** The project will not occur without the Conservancy providing a mechanism for NFWF grant funds to be utilized for these efforts.
7. **Greater-than-local interest:** The proposed project will lead to the restoration of Humboldt Bay plant and wildlife habitat of regional and statewide importance for resident and migratory species. In addition, the project will facilitate the protection of marshes in Oregon and Washington from colonization by invasive Spartina seeds dispersing from the Humboldt Bay region.
8. **Sea level rise vulnerability:** Sea level rise is likely to result in the landward migration of the marshes and dunes where invasives removal will take place. Invasives control in existing marshes and dunes is nonetheless important. If these species are not controlled now, disturbances associated with sea level rise and extreme storm events will likely favor species with the ability to colonize disturbed areas rapidly, leading new dunes and tidal marshes at inland locations or higher elevations to be even more dominated by invasives than current habitats. In addition, biodiversity is thought to be an important factor in maintaining the resilience of natural communities to climate change. Controlling invasives will enhance the native biodiversity of dunes and tidal marshes and, consequently, their resilience to climate change.

   Evidence suggests that coastal dunes dominated by native plants are better able to move inland in response to sea level rise while maintaining their integrity and protecting inland habitats and land uses. Data from 3 years of beach-dune monitoring and interpretation of 70+ years of aerial photography at the North Spit support a working hypothesis that phased removal of invasive vegetation coupled with the correct composition of native plantings promotes natural geomorphic processes that maintain foredune integrity during landward translation in response to sea level rise, thus reducing the risk of barrier destabilization and improving the buffering capacity of the dune system. Results from this site and research elsewhere suggest that a mixture of native grasses and forbs best promotes a dynamic,

functioning foredune ecosystem with improved resilience, while allowing for gradual translation, a key adaptive strategy.

Additional Criteria

9. **Urgency:** The proposed project is urgent due to the need to prevent further spread of invasives within and outside of the Humboldt Bay region, and to restore habitat for Humboldt Bay fish and wildlife populations that are already stressed by urban, agricultural, and other impacts.
10. **Leverage**: See the "Project Financing" section above.
11. **Readiness**: FOD and RCAA are already engaged in dunes and marsh restoration through invasives removal around Humboldt Bay using other funds, and can move forward expeditiously with this Project when funding is in place.
12. **Realization of prior Conservancy goals**: "See "Project History" above."
13. **Return to Conservancy**: See the "Project Financing" section above.
14. **Cooperation**: FOD and RCAA will involve a diverse group of stakeholders in control work, including local residents, community groups, and representatives of local, state, and federal agencies.
15. **Vulnerability from climate change impacts other than sea level rise:** Climate change is likely to result in an increase in invasive species. This project contributes to regional efforts that include a monitoring component to allow for early detection and rapid response to new invasions of Humboldt Bay's dunes and tidal marshes.
16. **Minimization of greenhouse gas emissions:** The project includes measures to minimize erosion due to *Spartina* removal, which will minimize the loss of carbon sequestered in Humboldt Bay tidal marshes. In addition, restoration of native marsh communities will increase the salt marshes' net primary productivity, resulting in increased carbon sequestration.

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, defines environmentally sensitive habitats as including "vegetated dunes along the North Spit to the Mad River, and along the South Spit" and "wetlands and estuaries, including Humboldt Bay and the mouth of the Mad River" (HBAP Section 3.30(B), p. 42). The HBAP cites Section 30240(a) of the California Coastal Act, stating 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, and other natural habitats for fish and wildlife in Humboldt Bay (HBAP, Section 3.30(A), pp.39-40). The HBAP also identifies the vegetated dunes north and west of the Mad River Slough as the least disturbed dune habitat in Humboldt County, and states that the area "has been the focus of much public comment regarding the necessity of protecting this area from further disturbance" such as sand mining,

OHV use, and utility development (HBAP Section 3.30(A), pg. 41). The project will result in the restoration of coastal dunes and 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 project's marsh restoration component 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, as well as Western Snowy Plover, beach layia and Humboldt Bay wallflower in the dunes. The proposed project is also consistent with HBMP Objective CAS-4: "Control or remove non-indigenous invasive species" (HBMP, 205).

The marsh restoration component of 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 enhancing tidal marshes, as discussed above in the "Project Summary" section.

The proposed project is also consistent with the North Coast Integrated Regional Water Management Plan (NCIRWMP), completed in July 2007. The NCIRWMP notes that many North Coast habitats have been "impacted…by invasion of non-native plant species" (NCIRWMP, p.14). The NCIRWMP notes that a significant disruption of ecological processes has resulted from this invasion, as well as from a number of other impacts, and that this disruption is exemplified by the decline in salmon populations in the region (*Id.*). The marsh restoration component of the proposed project is consistent with the NCIRWMP's Objective #1: "Conserve and enhance native salmonid populations by protecting and restoring required habitats, water quality and watershed processes" (NCIRWMP, p.7). The proposed project would further this goal by enhancing tidal marshes in estuarine environments that are important to the health of salmon populations.

The proposed project is also 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).

COMPLIANCE WITH CEQA:

Dune Restoration component of the Project: The County of Humboldt prepared and circulated for public review between March and April 2007 a Draft Initial Study and Negative Declaration (ND) analyzing the impacts of the project's dune restoration activities, and issued a Negative Declaration on April 5, 2007, pursuant to the California Environmental Quality Act. An Addendum to the ND was issued by the County in June 2009 to allow for restoration activities and access development to occur in an expanded area not considered in the original ND, and no additional environmental impacts were identified (Exhibit 4). The ND does not identify any potentially significant impacts from the project.

Staff has independently reviewed the ND and concurs that there is no substantial evidence based upon the whole record that the dune restoration component of the project will have a significant adverse effect on the environment. Staff recommends that the Conservancy find that there is no substantial evidence based on the record as a whole that the dune restoration component of the project may have a significant effect on the environment, as defined in 14 Cal. Code Regulations Section 15382.

Upon Conservancy approval of the Project, staff will file a Notice of Determination regarding the dune restoration component of the Project.

Marsh Restoration component of the Project: This aspect of the proposed authorization involves additional work in furtherance of and contemplated by the Humboldt Bay Regional Spartina Eradication Plan. On April 18, 2013 the Conservancy adopted the Plan and certified the "Final Programmatic Environmental Impact Report for the Humboldt Bay Regional *Spartina* Eradication Plan" (FEIR) pursuant to the California Environmental Quality Act (April 18, 2013 Staff Recommendation, attached as Exhibit 5; the FEIR is not attached to that Exhibit, but may be found at this link: http://tinyurl.com/ktetou4). The FEIR described the Eradication Plan, assessed the potential environmental impacts associated with the implementation of the Plan and identified mitigation measures that would avoid or reduce these impacts to a less than significant level. The FEIR is maintained and available for review at the offices of the Conservancy.

The FEIR is a *programmatic* Environmental Impact Report (Section 15168 of the CEQA Guidelines, 14 Cal. Code of Regulations, Sections 15000 *et seq.,* hereafter "Guidelines") in that it analyzes the potential effects of implementing the Eradication Plan throughout the Humboldt Bay region, rather than the impacts of a single individual eradication project. This program-level FEIR identifies mitigation measures that will be applied to reduce or eliminate impacts at treatment locations. The Conservancy may use the FEIR as a basis for "tiered" CEQA review and approval of individual treatment projects under the Eradication Plan, including the Spartina eradication activities in Humboldt marshes proposed by this staff recommendation.

A subsequent activity that follows under a programmatic environmental impact report that has been assessed and certified pursuant to CEQA (such as the FEIR) must be examined in the light of that programmatic report to determine whether an additional environmental document must be prepared. If the agency proposing the later activity finds that the environmental impacts of the later activity and the required mitigation to reduce those impacts were already identified and considered under the program environmental report, the activity can be approved with no further environmental documentation. (CEQA Guidelines, Section 15168(c)). The Guidelines suggest the use of a written checklist or similar device to document the evaluation of the activity to determine whether the environmental effects of the operation were covered in the program environmental impact report.

The Conservancy has prepared a checklist for the eradication activities proposed under this authorization, identifying the activities, assessing the potential impacts of the activities, identifying the required mitigation indentified by the FEIR and determining if the proposed activities will involve any additional impacts or more severe impacts than were identified by the FEIR and if any additional mitigation measures are needed to avoid or reduce those impacts. That checklist is attached as Exhibit 6. Based on this analysis, Conservancy staff has concluded that the program FEIR did fully consider the impacts associated with the proposed new activities and that there are no new impacts or more severe impacts and that there are no additional mitigation measures required. Conservancy staff recommends that the Conservancy adopt a finding to that effect.

A Notice of Determination was filed for the FEIR on May 6, 2013; no further notice need be filed.