

## Presidential Migratory Bird Federal Stewardship Award Nomination Application

### 1. Applicants:

U.S. Environmental Protection Agency (USEPA)- West Coast Estuaries Initiative for the California Coast.

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### 2. Co-applicant(s):

a) National Oceanic & Atmospheric Administration (NOAA)- Restoration Center; b) California Coastal Conservancy (Conservancy); c) Port of San Diego; d) U.S. Fish & Wildlife Service (USFWS)– San Diego National Wildlife Refuge Complex and Carlsbad Fish and Wildlife Office; and Southwest Wetlands Interpretive Association (SWIA).

### 3. Action:

The action described in this nomination is the organization, funding, design, and implementation by USEPA, USFWS, NOAA, the Conservancy, the Port of San Diego, and SWIA of the South San Diego Bay Coastal Wetlands Restoration and Enhancement Project (South San Diego Bay Project). This action resulted in the restoration and enhancement of approximately 300 acres within south San Diego Bay. The project provides a range of high quality coastal habitats representative of the historical coastal habitats that occurred in south San Diego Bay prior to the late 1800s. These include approximately 50 acres of shallow subtidal, 215 acres of intertidal, 15 acres of wetland/upland transition, and 20 acres of native upland scrub habitats. Opportunities for restoring and enhancing these types of coastal habitats, particularly tidally influenced wetland habitats, in Southern California are extremely limited, therefore, where such opportunities exist, restoration of the physical and biological processes that are characteristic of healthy wetland ecosystems must be a high priority. Restoration in south San Diego Bay, which is a Globally Important Bird Area and a Western Hemisphere Shorebird Reserve Network Site, is particularly important to the tens of thousands of migratory birds that travel along the Pacific Flyway.

Restoration in San Diego Bay has been discussed for many years, but no one individual agency had been successful in securing funds to implement a large scale restoration project. To achieve restoration in San Diego Bay a partnership approach is required. The South San Diego Bay Project is an excellent example of such a partnership. Through the combined efforts of local, state, and federal agencies, significant restoration in south San Diego Bay provides lasting benefits to migratory birds and contributes toward their conservation. Initially, this partnership included the San Diego NWR Complex and the Service's Coastal Program, which provided seed money for future restoration. The Conservancy became a partner when it added the Refuge's proposal for salt marsh restoration to their Wetland Recovery Project Work Plan.

In 2008, the San Diego NWR Complex and the Conservancy discussed the potential for submitting a proposal for a National Coastal Wetland Conservation Grant to fund the restoration of one of the western salt ponds within the Refuge. The Conservancy agreed to provide \$1.2 million as a non-federal match for the grant. While developing the grant proposal, the project team recognized the opportunity to expand the project scope to include additional restoration in San Diego Bay beyond the Refuge boundary. The Port of San Diego (Port), which had plans for several restoration projects in south San Diego Bay, was approached about participating in the grant proposal and they agreed. As a result, two additional sites in south San Diego Bay, Emory Cove and the Chula Vista Wildlife Reserve, were added to the grant proposal. The Port also agreed to provide \$1.3 million in matching funds for the grant and brought along several non-profit partners to assist in habitat enhancement and environmental education. The Conservancy was subsequently awarded a \$1 million grant to implement the project. After the grant was awarded, the Port applied for and received an additional \$1 million U.S. EPA West Coast Estuaries Initiative Grant to fund an even larger restoration effort at the Chula Vista Wildlife Reserve.

The project team in 2009 once again decided to broaden the scope of the restoration effort by applying for additional funding being provided through the NOAA Restoration Center under the American Recovery and Reinvestment Act. This additional funding facilitated the restoration of all three of the western salt ponds and provided funds for pre-project and post-construction monitoring of the restoration sites. The NOAA Restoration Center awarded the Conservancy approximately \$3 million dollars to support the proposed restoration efforts in south San Diego Bay. With almost \$7.7 million, the project team began to prepare for construction of the South San Diego Bay Project. To reduce costs, NEPA/CEQA documentation was handled in-house by the Refuge and the Port prepared the required permit applications. Construction on the project began in September 2009.

The project involved three sites in the south bay: the Chula Vista Wildlife Reserve (50 acres), Emory Cove (20 acres), and the western salt ponds (230 acres). Restoration work at the Chula Vista Wildlife Reserve focused on lowering portions of the site to achieve elevations that would support intertidal habitat. The material generated from this activity was slurried via pipeline across the bay to the western salt ponds, where it was used to create a shorebird/seabird roosting area. Once the desired elevations were achieved at the Reserve, salt marsh vegetation was installed with the help of volunteers and students working under the direction of the San Diego Oceans Foundation and Ocean Discovery Institute.

The enhancement activities at Emory Cove involved removing invasive ice plant, trash, and other debris. Once the site was cleaned-up, volunteers from the Coronado Rotary Club and San Diego Audubon assisted the Port in planting the disturbed areas with appropriate native wetland and upland vegetation.

On the San Diego Bay NWR, three active solar salt ponds were converted to approximately 230 acres of tidally influenced wetland habitats, including subtidal channels, intertidal flats, and intertidal salt marsh. Material removed to create the tidal channels in one of the ponds was moved into an adjacent pond where the elevations were too low to support salt marsh. Once dredging to create the subtidal channels and raise portions of site to support intertidal habitat was completed, the salt pond levees were breached to allow full tidal exchange in the ponds. Cordgrass and other native coastal salt marsh plants were then planted in portions of the salt pond restoration site. Other areas will naturally vegetate over time.

The South San Diego Bay Project was completed in November 2011 and a five-year post-construction monitoring program is underway. The data collected during post-construction monitoring will be shared with other agencies in an effort to improve the restoration community's understanding of how restored systems evolve over time. This project would not have been possible without the full participation of the project partners.

**4. When was the action initiated?**

This action, which was first described in the Comprehensive Conservation Plan for the San Diego Bay National Wildlife Refuge (September 2006), was initiated in June 2008 with the submittal of the initial grant proposal for the project. Subsequent grants and other funding were obtained in 2009, restoration of the western salt ponds, Chula Vista Wildlife Reserve, and Emory Cove was completed in 2011, and the five-year monitoring program is ongoing.

**5. Does the action take place locally, regionally, nationally or internationally?**

Although the action takes place locally within the south end of San Diego Bay, this project site is regionally and internationally significant to migratory birds traveling along the Pacific Flyway. South San Diego Bay is recognized as a Western Hemisphere Shorebird Reserve Network Site and a Globally Important Bird Area. The action restored important foraging habitat for a significant number of migratory shorebirds, seabirds, and waterfowl. In addition, the information to be provided by the five-year monitoring program will influence how future coastal restoration projects along the flyway are designed and implemented.

**6. How does the action meet or exceed agency mandates or daily activities?**

The West Coast Estuaries Initiative for the California Coast is a focused effort under the USEPA Targeted Watersheds Grant (TWG) Program designed to support the protection and restoration of the nation's water resources through a holistic watershed approach to water quality management. Through the partnerships that were formed to achieve this significant restoration action, USEPA, the Refuge and other agencies continued to meet their current mandates and required daily activities, while also organizing funding, coordinating efforts, and designing and implementing the restoration and enhancement of 270 acres of coastal wetlands and 30 acres of coastal upland habitat and conducting post-construction monitoring, actions beyond the required activities of the agencies involved.

**7. Explain how the action promotes/results in effective migratory bird conservation.**

Dredging and filling to accommodate commercial and industrial development have resulted in the loss of 42 percent of San Diego Bay's historical shallow subtidal habitat, 84 percent of its intertidal mudflat habitat, and 70 percent of its salt marsh habitat; habitats essential to the foraging needs of the migratory birds that travel along the Pacific Flyway. This action aids in migratory bird conservation by restoring 270 acres of shallow subtidal and intertidal foraging habitat in San Diego Bay. In addition, the project's five-year monitoring program will provide important information that can benefit future restoration projects in San Diego Bay and elsewhere along the southern California coast. The restored salt ponds' proximity to a regional recreational trail will facilitate long-term public outreach, environmental education, and interpretive programs related to the conservation of migratory birds and their habitats.

### **8. Provide details that demonstrate how the action is innovative.**

It was clear from the outset that funding to implement this significant restoration project would not be available from any one source and that creative partnerships would be essential to project success. Through an initial partnership between the Service, the Conservancy, the Port, and several non-profit organizations, approximately \$3 million in funding was secured to implement approximately 160 acres of restoration and enhancement. The Port subsequently secured an additional \$1 million from the EPA and together, the team partnered to submit a grant application to NOAA for additional funding that would allow the project to be expanded to include 270 acres of coastal wetland restoration and enhancement and some 30 acres of associated coastal upland restoration and enhancement. Through a partnership that included Federal, state, and local agencies, as well as non-profit organizations, approximately \$7.7 million in funding was secured for the project.

The other important aspect of this project that is often neglected due to lack of funds is the implementation of post-construction monitoring. Not only will our five-year monitoring program document species recruitment and bird use in the restored areas, but special advanced monitoring techniques, including LIDAR remote-sensing technology, will also be used to better understand the dynamics of this tidal restoration project. The program will also employ personnel at California State University at Long Beach to assist in food web analysis and processing and identification of invertebrates and at the San Diego Natural History Museum to assist with avian surveys.

### **9. Describe the roles and responsibilities of partners.**

The two land managers, the Service (San Diego NWR Complex) and the Port, oversaw all construction activity on their lands and will be responsible for the long-term management of the restored areas, as well as for implementing the five-year monitoring program. Another project partner, the California Coastal Conservancy (Conservancy), was the agency to which most of the grant funds were awarded, and was therefore responsible for ensuring compliance with the requirements of the NOAA Restoration Center grant and the National Coastal Wetland Conservation Grant. The NOAA Restoration Center assisted in developing the restoration design for the western salt ponds and provided funding for the 5-year monitoring program. NOAA staff from the Tijuana River National Estuarine Research Reserve (TRNERR) will assist in implementing the monitoring program. SWIA was the project manager for the restoration on Refuge lands. Partner funding included: NOAA Restoration Center through the American Recovery and Reinvestment Act of 2009 (~\$3 Million), Port (\$1.3 Million), Conservancy (~\$1.3 Million), Service Wildlife & Sport Fish Restoration Program and Coastal Program (\$1.1 Million), and U.S. EPA (\$1 Million), as well as financial and in-kind contributions from SWIA, San Diego Oceans Foundation, Ocean Discovery Institute, San Diego Audubon, and the Coronado Rotary Club.

### **10. How might the action be transferrable to other sites managed by this or other federal agencies? Does the action contribute to a tangible need locally, regionally, nationally, or internationally? How is this being encouraged?**

The lessons learned both in terms of the power of partnerships and the techniques used to implement the restoration project can and should be taken into consideration by other federal agencies when developing restoration plans. A white paper will be prepared to document project implementation and a final report describing the results of the five-year monitoring program will be completed. The Refuge is also contacting various graduate programs to encourage their participation at this site in a full range of scientific research

projects, including research into the effects of sea level rise and climate change on coastal restoration efforts. The insight provided as a result of these efforts should prove useful to other agencies considering coastal habitat restoration to support migratory birds.

**11. How does/did the action impact your agency's current migratory bird conservation practices?**

This action implements the objectives for shorebird conservation outlined in the San Diego Bay NWR Comprehensive Conservation Plan, as well as the strategies for conservation outlined in A Blueprint for the Future of Migratory Birds 2004 – 2014 and the conservation and habitat priorities outlined in the U.S. Shorebird Conservation Plan, Waterbird Conservation of the Americas Initiative, North American Water Conservation Plan, and North American Waterfowl Management Plan. The outreach opportunities provided by this action will also implement the recommendations of the plans described above for increasing awareness of the value of migratory birds and their conservation needs.

**12. How does the action benefit migratory bird species of concern?**

Restored shallow subtidal habitat will provide new foraging opportunities for seven species of ground nesting seabirds and three species of shorebirds that annually nest on the salt pond levees to the east of the salt pond restoration site, including two seabirds of conservation concern (black skimmer and gull-billed tern) and two federally-listed species (the endangered California least tern and the threatened western snowy plover). Restored intertidal habitat will also provide foraging for whimbrel, long-billed curlew, marbled godwit, red knot, and short-billed dowitcher, all the Birds of Conservation Concern (USFWS 2008), as well as the threatened western snowy plover. Restored subtidal habitat will support brant and lesser scaup (waterfowl of management concern). California least terns and a western snowy plover have already nested on the roosting site created within the restored ponds.