

mandates a 1:1 mitigation ratio. As wetlands impacted by the oil spill were not filled, but rather impaired by contamination, the Trustees have determined that partnering in the restoration of 563 acres of wetlands will provide the appropriate compensation for the 99 acres of wetlands and mudflats that were oiled as a result of the Cape Mohican oil spill.

Probability of Success

The probability of success for this wetland restoration is high. The project area is actually a former salt marsh that has been converted to pasture through diking. The watershed for many of the drainages has changed since diking was implemented, but the hydrologic sources themselves (e.g., Lagunitas Creek, Tomasina Creek, etc.) remain intact, if modified. While some subsidence has occurred (estimated 1 to 2 feet), the land within the Project Area does not appear to have excessively subsided since levees were constructed in the 1940's, unlike many areas in the San Francisco Bay – Sacramento/San Joaquin Delta (Bay-Delta). If subsidence is minimal, restoration of natural wetland structure and processes may be achieved without the need to replace subsided material with sediment from outside source areas, as sometimes occurs during restoration of heavily subsided areas in the Bay-Delta. In many areas where irrigation has not been performed and where the land has subsided slightly, the vegetation community has already begun to revert to salt marsh. Remnants of former tidal sloughs can be found in many portions of the Project Area, and these remnants may speed the process of reestablishing a tidal connection or exchange. As part of the purchase process for the property, the NPS contracted environmental consultants to determine the feasibility of restoring the Project Area to wetlands, and the consultants concluded that feasibility was extremely high.

In projects where subsidence has been minimal, wetland restoration can often be achieved very rapidly. For example, wetland restoration following breaching of levees at California Department of Fish and Game's (CDFG) Pond 2A (Napa-Sonoma Marsh Complex) proceeded extremely rapidly, with a salt marsh appearing structurally similar to natural ones developing in the former salt pond within only five to six years. Across the Napa River from Pond 2A, reestablishment of wetlands at the Port of Oakland's American Canyon marsh, a former pasture that had subsided moderately (4-5 feet) since diking, has also progressed quickly since partial breaching of the levee only three years ago (T. Huffman, CDFG, Napa-Sonoma Marsh Complex, pers. comm.). While the Proposed Project may not proceed as rapidly as some of the above referenced projects, the NPS does expect wetlands to rapidly develop should subsidence be minimal as expected, given the fact that hydrologic sources and networks remain, to a large degree, intact. By using some of the lessons learned from early restoration efforts within the Bay-Delta and elsewhere, the NPS expects that the Proposed Project will result in a wetland complex with functions and values similar to those achieved by other restoration projects and, perhaps more importantly, by other natural wetland systems.

Success Criteria and Monitoring

Based on the restoration alternative that is chosen during the NEPA process, success criteria will be developed to enable NPS managers to determine if the restoration is successful. To assist in developing success criteria, monitoring will be conducted prior to project implementation in both the Project Area and selected "reference" wetlands. Monitoring of reference wetlands will enable the NPS to develop a range of values for various parameters of ecological structure and function, such as vegetation cover and species composition, nutrient levels in water and sediment, flood water retention, and wildlife use. In addition, implementing monitoring in the Project Area during the environmental compliance phase of the Proposed Project will enable a comparison of pre-project and restored conditions. The Project Area will be monitored for approximately three years prior to project implementation and at predetermined intervals after construction is completed (e.g., Years 1, 2, 3, 5, 7, 10, 15, 20). The exact post-construction monitoring schedule will be determined during design of the long-term monitoring program.

Approximate Project Cost

Funding from the Cape Mohican settlement would be used to partially pay for wetland restoration at the Project Area. Purchase of the property, which was completed in February 2000, was funded by \$4.2 million in mitigation monies from the California Department of Transportation (Caltrans) and \$1.6 million in federal appropriations. Total cost of the property was \$4.6 million. Following hiring of a project manager, the NPS is now initiating planning for the environmental compliance, design, and long-term monitoring components of the Proposed Project. A preliminary cost estimate for implementation of the Proposed Project is approximately \$2.8 million. This estimate includes all phases of environmental compliance (e.g., development of restoration alternatives, preparation of an Environmental Impact Statement (EIS) and public scoping, Section 7 consultation with U.S. Fish and Wildlife Service, and preparation of other regulatory permits), construction and revegetation, and pre- and post-construction monitoring. The budget has increased since earlier estimates due to revisions in estimated cost of services and products based on inflation and other considerations. It should be noted that the scope of work has not changed. The NPS will reduce costs by conducting as much of the environmental compliance and long-term monitoring components of the Proposed Project as possible “in-house.” Table 1 presents the approximate project cost for a six-year program to design, permit, implement, and monitor the Giacomini Coastal Wetland Restoration Project.

**Table 1. Approximate project cost and projected funding for
Giacomini Coastal Wetland Restoration Project**

Expenditure	Duration	Total Cost
Property Acquisition		4,600,000
Project Implementation		
Staff (GS-11 Restoration Project Coordinator) ¹	6 years	402,744 ²
Staff (GS-7 Natural Resource Management Specialist) ¹	6 years	215,088 ²
Administrative Support Costs (field and office equipment, vehicle costs, document printing costs, etc.).	6 years	63,920
Technical Support ³	6 years	374,000
Construction and Revegetation		1,566,000
Long-Term Monitoring		207,000
Project Implementation Subtotal		2,828,752
Project Total (Property Acquisition and Implementation)		7,428,752
Funding Sources		
Secured Funding		
California Department of Transportation		4,200,000
Federal Appropriations		1,600,000
Secured Funding Subtotal		5,800,000
Funding Required (Project Total minus Secured Funding Subtotal)		1,628,752
Funding to be Secured From Other Sources		1,193,404
Funding Requested For This Proposal		435,348

¹ Staff will be responsible for certain portions of the biological baseline surveys, the NEPA process (e.g., public scoping, EIS preparation), formal consultation process with the U.S. Fish and Wildlife Service (e.g., preparation of the Biological Assessment), regulatory permitting (e.g., Section 404, Section 401), and certain portions of the long-term monitoring program

² Salary based on step increases within grade scale.

³ Contracts awarded for baseline wildlife assessments, hydrological assessments, topographic surveys, cultural resource surveys, etc.

Environmental Consequences

The NPS is initiating a formal environmental compliance process as required by NEPA and NPS Director's Order 12 that will be used to identify environmental consequences associated with restoration of the diked pasture land to tidal and non-tidal wetlands. The environmental compliance process is expected to include preparation of an EIS and formal scoping, formal consultation with U.S. Fish and Wildlife Service, and preparation of regulatory permits related to CWA Section 404 and Section 401 compliance. Environmental baseline studies have already begun to identify existing vegetation communities, wetlands, and special status plant species, and surveys for use by both common and special status wildlife species are expected to start in summer 2001.

While the preliminary work needed to identify environmental consequences of implementing this restoration project has not been completed, the NPS can anticipate some of the consequences based on preliminary environmental studies conducted as part of the feasibility study. A shift in the vegetation communities present (e.g., from predominantly pastureland with some freshwater marsh to salt, brackish, and freshwater marsh) will undoubtedly cause a shift in the types of both common and special status species that use the Project Area. Permanent impacts will occur from elimination of existing freshwater habitat used by amphibian and reptile species such as red-legged frog and northwestern pond turtle and potential elimination of berms and spoil piles used for nesting by burrowing owls. In addition, populations of a federal Species of Concern, Humboldt Bay owl's-clover, that grows on the tidal side of the levee system may be impacted if levees are removed, although restoration alternatives may use partial breaching as an avenue to avoid impacts. The NPS will develop a mitigation plan to offset any permanent impacts. Short-term impacts to other wildlife species are expected during construction, but the construction period will be timed to ensure that construction does not occur during nesting season (e.g., July/August through October).

Alterations in the levee system and increased tidal flushing in the Project Area may cause public concern about potential hydrologic impacts, including potential for flooding private residences and saltwater intrusion into groundwater wells. The NPS plans to contract with a hydrologist to address potential hydrologic impacts of each restoration alternative. Alterations of the levee system can change public recreational opportunities, as well. The NPS intends to address public recreation opportunities during the environmental compliance phase of the Proposed Project, with the goal of balancing both land- and water-based recreational needs with the needs of wildlife (i.e., minimizing disturbance). At this time, the NPS is considering use of an abandoned railroad berm as one of the potential alternatives for a public access trail, but cultural resource surveys will need to be performed to ensure that any cultural resources present are not impacted.

Evaluation

Wetlands provide important habitat for several species of fish and wildlife, as well as serving an important purpose in maintaining the quality and productivity of estuarine and marine ecosystems as a whole. Approximately 99 acres of wetlands and mudflats were affected by the Cape Mohican oil spill, many of which served as vital habitat for the very species of fish and wildlife that would benefit from the Proposed Project. In Tomales Bay, agricultural operations, leaking septic systems, watershed development, and limited historic mining have adversely affected wetlands, mudflats, and subtidal areas by increasing sediment, nutrient, and contaminant levels in an estuary that was until recently considered relatively pristine. Tomales Bay's critical role in supporting both natural and cultural resources (e.g., oyster fisheries) depends on the health of the estuary. Restoration of wetlands and water quality functions associated with wetlands can assist ongoing community efforts to improve health of the estuary by targeting and eliminating sources of pollution. Although temporary and permanent impacts to certain special status species may occur, overall, the Proposed Project is expected to provide tremendous benefits to wildlife such as shorebirds, waterfowl, rails, coho salmon, steelhead, and Pacific herring, as well as the ecosystem as a whole. Because all of these resources were adversely affected by the oil spill, there is a direct nexus between this restoration project and the oil spill.

The Trustees evaluated the Proposed Project against all Threshold and Additional screening criteria developed to select restoration projects and concluded that this Proposed Project is consistent with these selection factors. The Trustees determined that this type and scale of restoration will effectively provide appropriate compensation for wetland impacts that occurred as a result of the oil spill.

4.3.3.2 #12 - Restoration Alternative: Hamilton Wetlands Restoration

Project Description

The Cape Mohican oil spill impacted approximately 99 acres of intertidal wetlands and mudflats. Sampling data indicated that oil from the Cape Mohican was detected as far north into San Pablo Bay as the northern side of China Camp, and thus likely impacted San Pablo Bay fish and birds and their habitat.

The Hamilton Wetlands Restoration Project will restore a diverse mix of wetlands to over 900 acres of diked baylands at the former Hamilton Army Airfield in the City of Novato, Marin County, on the west side of San Pablo Bay. The site is a diked bayland that has subsided to elevations below those suitable for tidal marsh. The project will beneficially reuse over 10 million cubic yards of clean sediment from Bay navigation channel dredging projects to raise site elevations to support establishment of wetland vegetation. Establishment of the mix of wetland habitats will complete the reuse process for the closed military base.

The restoration site will be filled with clean material from Bay dredging projects to construct upland and seasonal wetland features and to speed the formation of tidal wetlands. Two channels to the Bay will restore tidal waters to the site. Dredged material will be placed low enough in tidal areas to allow the wetlands to form naturally on sediments carried in on the tides. Salt pannes, a feature of historic Bay wetlands that flood only on the highest spring tides, and areas of seasonal wetlands will be created at the upper margin of the tidal areas. The result will be one of the largest contiguous tidal wetlands in the Bay.

The California Coastal Conservancy and the San Francisco Bay Conservation and Development Commission (BCDC) are managing the Hamilton wetlands restoration project at the state level and have completed a conceptual plan for the project. While the site was historically owned by the Army, ownership will be transferred to public ownership once the Army has cleared the site of contaminants to a level suitable for wetland habitat. In late 1998, the U.S. Army Corps of Engineers finalized a feasibility analysis to provide for federal involvement in the project. The project environmental review process is complete, and a final Environmental Impact Review and Statement was issued in late 1998. Currently, the final design process is underway. Construction is scheduled to commence in 2001.

The conceptual design for the restoration project is based on the physical characteristics of the site. The design will create a landscape that gradually slopes from uplands to the Bay, similar to the historic shoreline at the site, and will support large expanses of tidal and seasonal wetlands.

Project Objectives

The project is intended to achieve three regional objectives:

- Create a diverse array of wetland and wildlife habitats that benefit a number of fish, bird, and wildlife species including shorebirds, herons, and other migratory birds, as well as special status species such as the California clapper rail, salt marsh harvest mouse, steelhead, and other flora and fauna;
- Reduce in-Bay disposal of dredged material and beneficially reuse dredged materials
- Facilitate the base-closure and reuse process.

The project helps implement the San Francisco Estuary Project's Comprehensive Conservation and Management Plan (CCMP) goals for Wildlife and Wetlands by restoring large, contiguous expanses of tidal wetlands and necessary adjacent uplands, providing habitat to help recover endangered species and increasing biodiversity. The project will implement a reuse plan for the base developed by local citizens

of Novato and advance the objectives of the San Francisco Bay Plan, CALFED, the Long Term Management Strategy for Dredged Material Disposal in San Francisco Bay, and the recently issued Regional Habitat Goals Project.

Scaling Approach

This wetland project will provide compensation for habitat and wildlife injuries by restoring approximately 900 acres of wetland habitat for bird species such as herons, egrets, shorebirds, waterfowl, and other migratory species impacted by the oil spill. Although the public will not be allowed into the sensitive habitat areas of the marsh, the San Francisco Bay Trail will provide access by traversing one edge of the site, thus providing partial compensation for lost human-use that occurred during the Cape Mohican spill.

Probability of Success

The probability of success of this project is high. This conclusion is based on the conceptual design for the project, which incorporates lessons learned from similar wetland restoration projects implemented in the San Francisco Bay Area, such as the nearby Sonoma Baylands Project, which also included the use of dredged material. In addition, a high level of effort is being extended to investigate the hydrology of the site and properly design the project to help ensure the project is successful.

Success Criteria

This project will be determined successful upon the creation of 900 acres of intertidal wetland and mudflat habitat. It is estimated that the wetlands will be recreated and achieve an ecological function similar to natural wetlands within 10 to 20 years of project completion.

Approximate Project Cost

To date, a variety of sources, including the CALFED Bay/Delta Program, U.S. Army Corps of Engineers, the State Coastal Conservancy, the National Marine Fisheries Service, Environmental Protection Agency, and the Marin Community Foundation, have funded the \$1.85 million cost of planning the Hamilton wetlands restoration project.

The total cost to construct and complete the project is approximately \$55 million (see Table 1), with 75 percent of this total (or approximately \$41 million) coming from the federal government. The local cost-share portion of the project, \$14 million, will come from a variety of sources, including CALFED, State appropriations, private foundations, and other sources. The BCDC requests \$500,000 from the Cape Mohican settlement for the Hamilton wetland restoration project.

Table 1. Cost summary for the Hamilton wetlands restoration project

Expenditure	Total Cost
Relocations	\$2,138,200
Levees and floodwalls	\$19,325,800
Dredged material placement	\$27,809,100
Post-construction monitoring	\$1,530,000
Pre-construction, engineering, and final design	\$1,210,000
Lands	\$241,600
Construction management	\$2,900,000
Total Cost	\$55,154,700
Federal cost-share (75%)	\$41,000,000
Local cost-share (25%)	\$14,154,700

Environmental Consequences

Insufficient details of the project are known at this time. Therefore, this section can not be completed.

Evaluation

Wetlands provide important habitat for several species of fish and wildlife and were impacted as a result of the oil spill. At the Hamilton site, wetlands have been lost due to subsidence of a diked bayland to levels no longer suitable for supporting intertidal marsh. Although short-term negative environmental impacts will occur during project construction, there will be substantial long-term benefits. The project will benefit several species of birds, special status fish and wildlife species, as well as help to improve overall water quality. As all of these resources were adversely affected by the oil spill, there is a direct nexus to the incident. Completion of the project will result in the reuse of closed military base property.

The Trustees evaluated this project against all Threshold and Additional screening criteria developed to select restoration projects and concluded that this project is consistent with these selection factors. The Trustees determined that this type and scale of restoration would effectively provide appropriate compensation for wetland impacts that occurred as a result of the oil spill. The Trustees placed this project in the “non-preferred” category because of concerns about the amount of time required to achieve benefits, the high cost of the overall project, potential liability issues delaying project implementation, and unresolved contaminant issues.

4.3.4 SANDY SHORELINE AND ROCKY INTERTIDAL HABITAT RESTORATION

4.3.4.1 #13 - Project Alternative: Sandy Beach Habitat Restoration at Point Reyes National Seashore

Project Description

Approximately 1,300 acres of sandy beach habitat were contaminated by the spill; most of these were in Golden Gate National Recreation Area (GGNRA) or Point Reyes National Seashore (PRNS). Numerous shorebirds, including the federally threatened western snowy plover, were observed to be oiled. Sandy beach habitat is very important for wintering, migratory and nesting shorebirds for foraging, resting and reproduction. A primary cause of declines in shorebirds is loss or degradation of sandy beach habitat (e.g., from invasive non-native plants such as European beachgrass (*Ammophila arenaria*) and iceplant). Restoration of sandy beach habitat is a very effective restoration alternative for impacts to sandy beach habitat.

The project site is at PRNS, which provides nesting habitat for snowy plovers as well as non-breeding and foraging habitat for plovers and a broad spectrum of other shorebirds. This restoration project consists of habitat restoration, which is described below.

Habitat restoration will involve restoration of 20 acres of coastal dune habitat at PRNS. This will be accomplished through removal of European beachgrass and iceplant, and the subsequent recovery of native vegetation. This effort will directly complement an existing 3-year (2001-2003) 30-acre NPS dune restoration project. During the current project, trials of eradication methods, such as manual removal or use of small equipment (e.g., Bobcat) are being conducted to determine the most effective methods to remove non-native vegetation. Non-native vegetation removal will be conducted by staff, contractors, school groups, and volunteers once effective methods are determined. A Project Coordinator and two support staff have been hired to develop protocols, supervise evaluation of eradication methods, prioritize work sites, conduct training, develop schedules, and direct field teams during eradication activities. Money from this alternative will be used to expand removal efforts to an additional 20 acres for a project total of 50 acres of restored habitat.

Restoration Objectives

This restoration project is intended to increase nesting and reproductive success of shorebirds, especially western snowy plover, at the PRNS. The objective will be accomplished by increasing habitat for shorebird foraging and nesting through the removal of non-native vegetation.

Scaling Approach

The Cape Mohican spill oiled an estimated 1,294 acres of sandy beach to varying degrees. Ecological Services of oiled beaches were estimated to be reduced for a three-month period prior to natural recovery. This project compensates for the interim loss of sandy beach habitat by restoring 20 acres of sand dunes.

Based on the results of similar projects and best professional judgement of the Trustees, this scale of habitat restoration undertaken to improve sandy beach habitat conditions, especially for nesting and foraging shorebirds, is expected to compensate for injuries to sandy beach habitat.

Probability of Success

The probability of success for this restoration project is high. The project will result in removal of non-native plants from 20 acres of dune habitat. Implementation of similar sandy beach habitat restoration programs has been successful in increasing shorebird productivity. The Trustees, therefore, expect that similar benefits will be accomplished through this project.

Success Criteria and Monitoring

The success criterion will be the removal of invasive non-native vegetation from 20 acres at PRNS, which will increase nesting habitat and may increase western snowy plover productivity. As part of this project, the Trustees will continue to remove any new growth of beachgrass and iceplant for two years.

Approximate Project Cost***Partnerships and In-Kind Funding Support***

Source of Funds	Total Cost
National Fish and Wildlife Foundation grant	\$25,000
California Native Plant Society volunteers (150 hrs/year @ \$20.00/hr x 3 years = \$9,000)	\$9,000
Point Reyes National Seashore Association (\$35,000/yr x 3 yrs = \$105,000)	\$105,000
Habitat Restoration Program (HRP) volunteers (500 hrs/yr @ \$15.00/hr x 3 years = \$22,500)	\$22,500
NPS-PRNS Personnel and Support	\$110,500
NPS Natural Resource Preservation Program (NRPP)	\$333,134
Total Already Secured	\$605,134

Funding Requested

Expenditure	Year 1	Year 2	Year 3	Year 4	Year 5	Total Cost
GS-07 BioTech (9 months/yr)	\$32,000	\$33,600	\$35,280			\$100,880
GS-06 BioTech (4 months/yr)	\$10,630	\$11,160	\$11,719	\$12,305	\$12,920	\$58,734
Transportation	\$2,400	\$2,400	\$2,400	\$1,800	\$1,800	\$10,800
Work Crews	\$38,000	\$38,000	\$38,000	\$3,600	\$3,600	\$121,200
Equipment	\$2,000	\$2,000	\$2,000			\$6,000
Supplies/Tools	\$1,200	\$1,200	\$1,200	\$1,000	\$1,000	\$5,600
Total Requested	\$86,230	\$88,360	\$90,599	\$18,705	\$19,320	\$303,214

Environmental Consequences

This project will result in environmental benefits by removing non-native vegetation to restore native plant species in sandy beach habitat in a national park. The project will also increase available nesting habitat for the federally listed threatened western snowy plover. Nest protection activities will restrict public use of the beach in a small area for a short period of time, but any adverse social or economic impacts are expected to be negligible. This project is not expected to result in any significant adverse environmental impacts.

Evaluation

Sandy beach habitat is very important for wintering, migrating and nesting shorebirds. This habitat has been degraded by the invasion of non-native vegetation. Coastal dune restoration will also benefit numerous species, in addition to birds, including native dune invertebrates, and numerous rare dune plant species. Habitat restoration is a practical and effective method to improve shorebird productivity, and has been successfully implemented at nesting and foraging sites elsewhere in California. Prior experience with shorebird management in California has shown that reproductive success is reduced without proper habitat management similar to that proposed in this project. Although accurate quantification of the success and benefits of this project is difficult, this project is expected to be successful in conserving shorebirds at PRNS.

The Trustees evaluated this project against all Thresholds and Additional screening criteria developed to select restoration projects and determined that this project is consistent with these selection factors. The Trustees determined that this type and scale of restoration will effectively provide appropriate compensation for injuries to sandy beach habitat that occurred as a result of the oil spill.

4.3.4.2 #14 – Restoration Alternative: Protection of Duxbury Reef Through Education

Project Description

Oil from the Cape Mohican affected rocky intertidal habitat along the Pacific Ocean in Marin County and along the San Francisco Bay shoreline. Approximately 516 acres of rocky intertidal habitat were oiled, and the recreational use of these areas was adversely affected. The ocean area between San Francisco and Point Reyes includes much of the shoreline of the Gulf of the Farallones National Marine Sanctuary (GFNMS).

The project will be located at Duxbury Reef Marine Reserve (DRMR) in Marin County, California. This area, two and one half miles long and about one-third mile wide, is the largest exposed shale reef in California. The project will possibly affect about one third of this 520 acre area. This project includes habitat restoration and protection of the rocky intertidal habitat that will probably be injured and lost as a result of current public use. Protection of this habitat will be achieved through the design and use of better management practices, environmental education, and stewardship programs.

This program will be developed through the cooperative efforts of GFNMS and Marin County Open Space District. This project is within an area that is part of two long-term monitoring programs sponsored by the GFNMS and the Point Reyes National Seashore (PRNS). Accordingly, this local, community-based stewardship program will be developed and implemented in coordination with the Farallones Marine Sanctuary Association (FMSA), the Marin County Open Space District, PRNS, GFNMS and the Fitzgerald Marine Reserve (FMR). FMR contains a similar smaller reef in San Mateo County.

Restoration Objectives

The objective of this project is to avoid further injury to and facilitate the natural recovery of intertidal rocky habitat at Duxbury Reef. This will be achieved through environmental education and stewardship program aimed at increasing public awareness of this sensitive habitat and controlling the large number of visitors to the area. The onsite education and interpretation will be implemented for four years and will enhance the qualities of visitor use and the protection of the reef. Printed materials and exhibits are projected to last seven to ten years. Major benefits to the recovering intertidal area will occur during the four-year program. Total recovery may not occur unless the program lasts seven to fifteen years.

Scaling Approach

It is expected that this project will result in the restoration of some of the most injured areas of rocky intertidal habitat at Duxbury Reef. The Trustees believe this restoration, when combined with increased environmental education and awareness, will provide sufficient compensation for injuries to rocky intertidal habitat that occurred as a result of the oil spill.

Probability of Success

The probability of success for this project is high. Environmental education programs of this nature are commonly very beneficial because the public gains knowledge of and appreciation for the environment. Educational programs and associated materials and displays almost always attract public interest and usually result in a positive benefit to the natural resources. The Trustees believe that positive benefits will be realized as a result of this project and that methodologies and materials may be used at other locations.

Success Criteria and Monitoring

Much of the intertidal rocky habitat is expected to recover naturally over a period of approximately three years provided current human practices would cease or be significantly altered. The project will be considered successful when public use is altered and results allows for the reef to begin recovering. Monitoring the effectiveness of the environmental education program is essential, in order to prevent injury to the restored portion of this project, and other heavily used areas of the reef. The restoration and monitoring portion of this project will include:

- A census of visitors and assessment of where visitors concentrate during the approximate 100 daylight hours of low tides each year when most people visit the rocky intertidal zones.
- Mapping areas of high visitor use, impacted and non-impacted areas, reef contours, observation sites, and monitoring sites.
- Assessment of rocky intertidal habitat's percent of cover, density, productivity, species diversity, effects of human trampling, and recovery.

Approximate Project Cost

Expenditure	Year 1	Year 2	Year 3	Year 4	Total Cost
Environ. Educ. Specialist	\$43,000	\$44,300	\$45,600	\$47,000	\$179,900
Biologist/Naturalist	\$18,000	18,500	\$19,100	\$19,700	\$75,300
Biologist/Naturalist	\$9,000	\$9,300	\$9,600	\$9,900	\$37,800
Biologist/Naturalist	\$7,000	\$7,200	\$7,400	\$7,600	\$29,200
Materials	\$13,000	\$10,700	\$8,300	\$5,800	\$37,800
TOTAL for this Proposal	\$90,000	\$90,000	\$90,000	\$90,000	\$360,000
Other Contributors ¹	\$51,500	\$51,500	\$51,500	\$51,500	\$206,000
GRAND TOTAL					\$566,000

¹ Point Reyes National Seashore, College of Marin, Gulf of the Farallones National Marine Sanctuary, Farallones Marine Sanctuary Association, Marin County Open Space District, Fitzgerald Marine Reserve.

Environmental Consequences

Direct positive benefits will result from this project including the prevention of further injury and recovery of rocky intertidal habitat currently impacted by human use. In addition, the public will be better informed and future human-caused adverse impacts may be avoided or minimized at Duxbury Reef and other areas. No significant environmental or economic adverse impacts are expected to occur as a result of this project.

Evaluation

Environmental education is an effective and practical method to achieve the restoration of injured intertidal habitats. Similar project methods have resulted in the recovery and protection of sensitive

natural resources in other areas. The project is not expected to result in any significant adverse environmental or economic impacts. A monitoring program directed at documenting the expected recovery of the intertidal habitat will be implemented.

The Trustees evaluated this project against all Thresholds and Additional screening criteria developed to select preferred restoration projects and determined that this project is consistent with selection factors. The Trustees determined that this type and scale of project will effectively provide appropriate compensation for impacts to rocky intertidal habitat.

4.4 EVALUATION OF LOST HUMAN-USE RESTORATION ALTERNATIVES

The Trustees have identified two restoration project alternatives to provide compensation for lost human-use that occurred at public facilities and areas as a result of the Cape Mohican oil spill. These restoration projects involve public stewardship and improved beach access, and will be implemented at the GGNRA and Angel Island State Park. The details of these Restoration Project Alternatives are described below.

4.4.1 Human Use Restoration

4.4.1.1 #15 – Restoration Alternative: Angel Island Foot Trail Enhancement

Project Description

Angel Island was one of the areas most affected by the Cape Mohican oil spill, and all of the beaches on the island were closed from 10 to 43 days because of the oil deposited on them during the spill (Table 1). The public was denied access to these beaches until they were cleaned up and declared safe for use.

This project involves the construction of stairways and walkways and trail improvements to enhance public access to beaches on Angel Island that were closed to public use because of the oil spill. The following beach-access enhancement projects will be completed:

- The trail to Perle’s Beach will be rebuilt and upgraded, and the wooden stair will be replaced.
- A walkway-stairway will be built at Quarry Beach to allow for safe and convenient access.
- A walkway-stairway will be built at China Cove beach to allow for safe and convenient access.
- The trail that connects the East Garrison dock to China Cove will be repaired.
- The feasibility of constructing a trail to allow direct and easy access between the East Garrison dock and Quarry Beach will be evaluated. If feasible, the trail will be constructed.

Restoration Objectives

The objectives of this project are to provide additional use opportunities and enhance the quality of use on Angel Island to compensate for lost and diminished human-use that occurred as a result of the Cape Mohican oil spill. These objectives will be accomplished by providing safe and convenient access to several beaches on Angel Island.

Scaling Approach

There are no known studies of the value which will be derived by the participants and volunteers in the Habitat Stewardship Program or of that which the general public will derive from the enhanced educational and esthetic experience of the restored marsh habitat and biota. Consequently, without conducting an economic study of any proposed site specific restoration project, it is not possible to reliably establish a value. The OPA regulations provide that if, in the judgment of the trustees, valuation of the replacement services cannot be performed within a reasonable timeframe or at a reasonable cost, trustees may estimate the value of the lost services and then select the scale of compensatory restoration that has a cost equivalent to the lost value. Relying on this authority, the Trustees propose to fund the Habitat Stewardship Program in an amount that is equivalent in cost to the lost use value derived from their use of the benefits transfer methodology.

Probability of Success

Considering the unimproved condition of current access points to public beaches on Angel Island, the probability of success for this project is very high. Similar projects on Angel Island have resulted in increased use and improved public safety. For example, steps were constructed in Ayala Cove to improve

beach access and to discourage visitors from scrambling down the sea wall to the beach. This allows for a much safer and convenient access. The existing staircase at Perle's Beach was constructed to provide access to a beach that was attractive to visitors, but whose only access was a drainage area on the hillside. The staircase provided easier and safer access over the drainage area route and increased the use of Perle's Beach. However, the staircase has been damaged by storms over the last decade, and the original construction design did not adequately address erosion concerns. Thus, completion of this project is expected to achieve the restoration objectives of increased public use of beaches and enhanced quality of use.

Success Criteria and Monitoring

Success criteria will be the completion of each of the project elements as described above. Monitoring is not practical or cost-effective for this project, and will not be conducted. Ongoing maintenance of the new facilities will be provided by California State Parks personnel.

Approximate Project Cost

The following project budget will address all five of the identified elements of this restoration project.

Expenditure	Total Cost
Planning and Environmental Compliance:	\$15,000
Construction	\$150,000
Oversight	\$15,000
Total	\$180,000

Environmental Consequences

This project will result in positive benefits by enhancing the quality and amount of public use at Angel Island, which was affected by the oil spill. No significant adverse economic impacts are expected to occur as a result of this project.

To minimize potential short-term impacts to public use that may occur during construction, the project will be implemented during periods of low public use. Potential environmental impacts from construction activities will be addressed through the permit process. Construction of the Quarry Beach and China Cove walkways will prevent or minimize future adverse impacts to vegetation, which currently is affected by soil erosion at the site caused by public use of an unimproved foot trail. Thus, additional project benefits should be realized since it is expected that the vegetation will recover and soil erosion will be minimized or prevented.

Implementation of the project is expected to improve visitation to the beaches and will likely result in a small increase in visitor use. The project will provide visitors with a safer and more accessible route to the beaches. The impact of increased visitation to the beaches will likely result in an increased need for trash collection and safety patrols by rangers. Both of these needs can be met within existing resources.

Evaluation

Trustee analysis indicates that improved access to public beaches is a feasible, practical, and cost-effective means to increase the quantity and quality of human-use at Angel Island, which was impacted by the oil spill. Access improvement projects at other parks in the San Francisco Bay have been successful and resulted in increased public use. The project is not expected to have adverse economic impacts. Potential short-term environmental impacts can be addressed through permit requirements and impacts to public use can be minimized through proper timing of construction activities. Because many factors affect public use and it is complex to accurately measure the quality of visitor use, precise quantification of increased quality and quantity of use resulting from foot trail enhancement will be very difficult to measure.

The Trustees have evaluated this project against all Threshold and Additional screening criteria developed to select preferred restoration projects and determined that this project is consistent with selection factors. The Trustees determined that this type and scale of project will effectively provide appropriate compensation for lost human-use that occurred as a result of the oil spill.

4.4.1.2 #16 – Restoration Alternative: Crissy Field Habitat Stewardship Program

Project Description

As a result of the oil spill, eleven facilities or areas within the GGNRA were closed between one and six days, and the total number of days of closure across all areas was 44 days (Table 4). Human-use damages resulted from both lost and diminished quality of visits at the GGNRA and the value of these damages were calculated to be approximately \$938,300.

Within the GGNRA, Crissy Field beach was the site most adversely impacted, and approximately 7,000 linear feet of beach and associated shorelines were heavily oiled. Crissy Field lies entirely within the GGNRA and stretches over 1.5 miles of shoreline at the convergence of the San Francisco Bay Area's urban center and the mouth of a biologically rich and vast natural expanse. The GGNRA is prominently located and is one of the area's most popular parks because of this singular setting and spectacular vistas of the Golden Gate, Marin Headlands, Alcatraz, Angel Island and San Francisco skyline offered from the accessible shoreline. It is a destination for walkers, joggers, and bicyclists and is one of the premier boardsailing venues in the world. Crissy Field is one of the preeminent shoreline access locations in the Bay Area with current visitation approaching 1 million visitors annually. As shoreline park improvements near completion at Crissy Field, a dramatic increase in visitation is occurring. Because of the location, biological richness, and high public use, the site provides an unparalleled educational opportunity.

A large and highly visible environmental and public use enhancement project is now underway at Crissy Field to restore tidal marsh, beach, and dune habitats and improve public access and visitor experiences at the park. Although funds were acquired for the project, insufficient funds are available for public outreach and education and for monitoring of the habitat being restored.

This project will consist of developing and operating a 4-year public stewardship program whereby participants will visually and quantitatively measure the biological and physical changes of the newly restored habitats and participate in a variety of habitat restoration activities. Specifically, the project will provide funds for a Restoration and Public Programs Coordinator and Field Assistant, Monitoring Program Coordinator, and career development internships. These staff will conduct or support volunteer recruitment and coordination, monitoring, and education. Funds may also address associated school group transportation costs, outreach materials, information management needs, and restoration supplies.

Restoration Objective

The project presents opportunities to encourage community participation in habitat restoration projects, thereby promoting an understanding of the process of restoration and the value of monitoring such projects. It is anticipated that future community-based ecological restoration and monitoring efforts will build from adaptive management principles in which the public will collect valuable monitoring data and subsequently learn how this information feeds into determining management needs. These activities will aid the health and viability of the newly recreated natural habitats.

This project provides a rare opportunity for large segments of the public to participate and learn in partnership with professionals throughout the evolution of the project. The Crissy Field habitat stewardship project promotes a unique mechanism to increase use of the park and site by actively engaging a broad spectrum of diverse universities, communities, interest groups, and visitors in helping the newly restored environments develop and thrive. Consequently, this community outreach program

will substantially enhance the participation and visitation of an increasingly broad spectrum of park visitors.

This comprehensive natural resources restoration, community stewardship, and monitoring program will engage the public's attention. It will provide a unique opportunity for visitors to tour the project's sensitive natural areas, which will complement the use and visitor experience opportunities being developed throughout the Crissy Field Plan.

Approximate Project Cost

Expenditure	Quantity	Unit Cost	Total Cost
Monitoring Program Coordinator, GS-9/11 Ecologist	4 years	\$72,066	\$288,260
Restoration & Public Programs Coordinator, GS-9 Natural Resource Management Specialist	4 years	\$59,560	\$238,240
Restoration & Public Programs Field Assistant, GS-5 Biological Sciences Technician	3 years	\$39,000	\$117,000
Volunteer Coordination & Outreach Career Intern	4 years	\$12,000	\$48,000
Restoration Career Intern	3 years	\$12,000	\$32,000
Monitoring Career Intern	4 years	\$12,000	\$48,000
Outreach Support/Transportation	4 years	\$9,625	\$38,500
Information Management Assistance	4 years	\$4,000	\$16,000
Materials/Printing/Media	4 years	\$4,000	\$16,000
Office Equipment & Supplies	4 years	\$2,000	\$ 8,000
Total Program Cost			\$850,000

* Salaries include 40 % benefits; estimated GS pay scale step increases and estimated cost-of-living increases.

Scaling Approach

There are no known studies of the value which will be derived by the participants and volunteers in the Habitat Stewardship Program or of that which the general public will derive from the enhanced educational and esthetic experience of the restored marsh habitat and biota. Consequently, without conducting an economic study of any proposed site specific restoration project, it is not possible to reliably establish a value. The OPA regulations provide that if, in the judgment of the trustees, valuation of the replacement services cannot be performed within a reasonable timeframe or at a reasonable cost, trustees may estimate the value of the lost services and then select the scale of compensatory restoration that has a cost equivalent to the lost value. Relying on this authority, the Trustees propose to fund the Habitat Stewardship Program in an amount that is equivalent in cost to the lost use value derived from their use of the benefits transfer methodology.

Probability of Success

The probability of success for this project is very high based on the experience with similar stewardship programs at GGNRA. The Presidio Park Stewards and Habitat Restoration Teams at GGNRA have contributed hundreds of thousands of volunteer hours to stewardship of the park's native habitats. Thus, completion of this project is expected to achieve the objectives of increased public use, participation in environmental restoration projects, enhanced public environmental awareness, and enhanced quality of use.

Success Criteria and Monitoring

Success criteria will be the development and implementation of a functioning stewardship program that involves diverse sectors of the public. Detailed records will be kept documenting the number of hours of public participation and work accomplished and will be reported annually. It is expected that the re-created wetland and dune habitats will have stabilized by the end of the four year project, allowing a reduction of the level of long-term stewardship and monitoring. At that point, the reduced level of stewardship and monitoring required will be integrated into GGNRA's existing Presidio Park Stewards and natural resource monitoring programs.

Environmental Consequences

This project will increase the total value of human-use of the area most heavily affected by the spill by increasing the number of participants and visitors and by enhancing the quality of each visit or activity. In addition, the stewardship program will provide valuable assistance in conducting the monitoring of the important habitat restoration project currently being implemented at the park.

Evaluation

Trustee analysis of this project concluded that it offers a rare opportunity to implement a stewardship program expected to enhance public environmental awareness and increase the amount and quality of public use at GGNRA. Similar stewardship programs at the GGNRA and other parks have achieved these types of objectives, and the Trustees expect this project to also be successful.

The Trustees evaluated this project against all Threshold and Additional Screening Criteria developed to select preferred restoration projects and determined that this project is consistent with selection factors. The Trustees determined that this type and scale of project will effectively provide appropriate compensation, along with other projects, for lost human-use that occurred as a result of the oil spill.

4.5 ADDITIONAL NON-PREFERRED RESTORATION ALTERNATIVES

A large number of proposed restoration projects have been identified during all phases of the Restoration Planning process, including the injury assessment, public scoping, and restoration selection phases. The proposed restoration projects originated from the Trustee Council, other government agencies, and public and the Trustee Council considered and evaluated all of the proposed projects.

Projects evaluated early in the Restoration Planning process were reviewed using an informal screening approach that included criteria such as: a connection to the natural resources impacted by the oil spill, feasibility of the project, location of the project, and cost of implementing the project. The Trustee Council also used their best professional judgement in regards to these criteria and decision to accept or withdraw projects from further consideration in the early stages of Restoration Planning. Later in the Restoration Planning process, formal screening criteria were established and used to determine whether to retain or withdraw projects from further consideration. Some proposed restoration projects were withdrawn because funding from other sources was identified. Following is a brief description of several of the restoration projects considered but withdrawn for these various reasons.

Project funding received from other sources:

- **Entry Triangle Marsh Wetland Restoration:** This project would restore 8 to 10 acres of tidal marsh and mudflat habitat on the Don Edwards San Francisco National Wildlife Refuge by re-establishing tidal circulation to the marsh. The project would involve the removal of culverts, replacement of a tidal gate and re-defining existing channels.

- **Bolinas Lagoon Wetland Restoration:** Bolinas Lagoon is a 1400 acre tidal estuary located near the villages of Bolinas and Stinson Beach in western Marin County. The project is part of a larger Bolinas Lagoon effort. Specifically, this project would have enhanced or replaced several culverts that pass underneath Highway 1. Modification of these structures would increase water flow from the watershed to the lagoon and decrease sedimentation.
- **Tubbs Island Levee Setback:** This project would restore 72 acres of tidal salt marsh at the north end of San Francisco Bay within the San Pablo Bay National Wildlife Refuge. The project entails constructing a protection levee and breaching an old levee to open a 72-acre fallow field to tidal waters.

Projects that did not pass Trustee Council screening criteria:

- **Herring Stock Assessment:** This project would have determined and catalogued the genetic identities of different spawning schools of Pacific herring collected from San Francisco, Tomales, and Bodega Bays using mtDNA and microsatellite DNA markers. This information would help fisheries managers and researchers identify the population structure and genetics of herring that utilize San Francisco Bay and nearby bays for reproduction. This project was viewed as a research project by the Trustee Council and not an appropriate use of oil spill settlement funds.
- **Eelgrass Restoration in San Francisco Bay:** Eelgrass beds are productive areas in the estuarine ecosystem, and provide nursery, forage and structural habitat for birds, invertebrates, and fish including herring, a very important fishery. This project involved planting 1-acre eelgrass beds at three locations; Candlestick Point Park, India Basin, and Central Basin-Mission Rock to increase herring spawning habitat in San Francisco Bay and possibly adult herring abundance. The project was determined as technically questionable and financially infeasible with settlement funds.
- **Creation of Artificial Herring Spawning Habitat:** This project involved creation of new herring spawning habitat using oyster shell dredged from San Francisco Bay by constructing three artificial shell beds approximately 50 feet by 50 feet by 1 foot deep in water 10 to 15 feet deep mean low lower water. The goal was to increase the herring population, while also benefiting other aquatic species such as mussels, anemones, sponges, barnacles, and fishes, by increasing their spawning habitat. The project was deemed as technically infeasible for permitting reasons and highly questionable as suitable habitat.
- **Treasure Island Wetland Restoration:** Treasure Island is a 400-acre island in central San Francisco Bay. The project involved the creation of a freshwater and a tidal salt marsh on the eastern side of the island. The project also included an interpretive center, viewing overlooks, trails, and boardwalks. This project did not pass screening criteria because it involved creation of freshwater wetlands for wastewater treatment, which was not considered to be consistent with the Trustees' goal of compensating for spill-related impacts to salt marsh and mudflats.
- **Waterbird Conservation Project:** Development and implementation of a coordinated seabird conservation and management plan for central San Francisco Bay. The project involved the establishment of a committee to coordinate the enhancement of seabird nesting habitat, especially for double-crested cormorants, by creating, enhancing, and protecting roosting sites. The Council determined that there were enough suitable bird restoration projects that could be implemented directly, rather than indirectly through a committee.

- **Big Lagoon Public Access Project:** Big Lagoon is a fresh water wetland system located at the mouth of Redwood Creek at Muir Beach in Marin County. The project would entail removing levees, realigning Redwood Creek to its natural alignment, improving public access, and removing fill material resulting from land use practices in the watershed and former wetland. This project was dropped from consideration because a feasible project to compensate for lost public use of GGNRA land was identified at Crissy Field where the worst impacts to National Park lands occurred.
- **Wetlands Walkway at Candlestick Point State Recreation Area:** The project involves the construction of an elevated walkway into the wetlands at Candlestick Point State Recreation Area. The goal of the project is to provide recreational and environmental education to the public through interpretive signs and guided walks conducted by park rangers. This project was dropped from consideration because a feasible project was identified at Angel Island State Park where the worst impacts to State Park lands occurred.
- **Tern Nesting Bair Island:** The project involves the creation of suitable nesting substrate for Caspian and least terns by removing vegetation and placing shell and sand nesting material at the site. Levees at the site would be breached and soil or dredged material may need to be deposited to ensure nesting substrate is at a higher elevation than the flooded salt marsh. This project was dropped from consideration because the Alameda tern restoration project had a closer nexus to the location of the spill and was considered more technically feasible.
- **Martin dunes Acquisition:** This project involved acquisition of dune habitat near the mouth of the Salinas River in Monterey County to benefit snowy plovers and other shorebirds. The project was dropped from consideration prior to settlement of the case because other potential shorebird and sandy beach restoration projects were identified that were geographically closer to the area affected by the spill.
- **Muir Beach Water Supply Project:** The Muir Beach Water Supply Project would provide an alternative water supply system for the community of Muir Beach which currently relies on withdrawal of water for domestic use from the Redwood Creek basin. These water withdrawals pose a major threat to aquatic resources, including coho salmon and steelhead. A pipeline would be installed to supply potable water from Marin Municipal Water District facilities in the Mill Valley area to the existing distribution system. The Trustees determined that this project financially infeasible with settlement funds and did not have a strong enough relationship to the resources injured by the spill.

5.0 APPLICABLE LAWS AND REGULATIONS

5.1 Overview

The three major environmental statutes that guide the restoration of the injured resources and lost services for the Cape Mohican oil spill are OPA, NEPA, and CEQA. These statutes set forth a specific process of environmental impact analysis and public review. In addition, the Trustees must comply with several additional federal, state and local applicable statutes, regulations and policies. Relevant, and potentially relevant, statutes, regulations and policies are discussed below.

In addition to compliance with these statutes and regulations, the Trustees should consider relevant environmental or economic programs or plans that are ongoing or planned in or near the affected environment. The Trustees should ensure that proposed restoration projects neither impede nor duplicate such programs or plans. By coordinating restoration projects identified in this document with other relevant restoration programs and plans, the Trustees can enhance the overall effort to restore and improve the environment and resources affected by the oil spill.

Several of the restoration actions proposed in this RP/EA involve activities conducted in wetlands and waters of the United States. Therefore, these activities are subject to review and approval by the appropriate regulatory agencies.

5.1.1 Federal Statutes

Oil Pollution Act of 1990 (OPA), 33 USC 2701, et seq.; 15 CFR Part 990

OPA establishes a liability regime for oil spills that injure or are likely to injure natural resources and/or the services that those resources provide to the ecosystem or humans. Federal and State agencies and Indian tribes act as Trustees on behalf of the public to assess the injuries, scale restoration to compensate for those injuries and implement restoration. Section 1006(e)(1) of OPA [33 USC 2706 (e)(1)] requires the President, acting through the Under Secretary of Commerce for Oceans and Atmosphere (NOAA), to promulgate regulations for the assessment of natural resource damages resulting from a discharge or substantial threat of a discharge of oil. Assessments are intended to provide the basis for restoring, replacing, rehabilitating, and acquiring the equivalent of injured natural resources and services.

This rule provides a framework for conducting sound natural resource damage assessments that achieve restoration. The process emphasizes both public involvement and participation by the Responsible Party(ies). The Trustees have followed the regulations in this assessment.

National Environmental Policy Act (NEPA), as amended, 42 U.S.C. 4321, et seq., 40 C.F.R. Parts 1500-1508

The National Environmental Policy Act requires an assessment of any federal action that may impact the environment. NEPA applies to restoration actions undertaken by federal trustees, except where a categorical exclusion or other exception to NEPA applies. Congress enacted NEPA in 1969 to establish a national policy for the protection of the environment. NEPA established the Council on Environmental Quality (CEQ) to advise the President and to carry out certain other responsibilities relating to implementation of NEPA by federal agencies. Pursuant to Presidential Executive Order, federal agencies are obligated to comply with the NEPA regulations adopted by the CEQ. These regulations outline the responsibilities of federal agencies under NEPA and provide specific procedures for preparing

environmental documentation to comply with NEPA. NEPA requires that an Environmental Assessment (EA) be prepared in order to determine whether the proposed restoration action would have a significant effect on the quality of the human environment.

Generally, when it is uncertain whether an action would have a significant effect, federal agencies would begin the NEPA planning process by preparing an EA. The EA may undergo a public review and comment period. Federal agencies may then review the comments and make a determination. Depending on whether an impact is considered significant, an environmental impact statement (EIS) or a Finding of No Significant Impact (FONSI) would be issued.

The Trustees have integrated this RP/EA with the NEPA and CEQA processes to comply, in part, with those requirements. This integrated process allows the Trustees to meet the public involvement requirements of OPA, NEPA and CEQA concurrently. The RP/EA is intended to accomplish partial NEPA and CEQA compliance by: (1) summarizing the current environmental setting, (2) describing the purpose and need for restoration action, (3) identifying alternative actions, (4) assessing participation in the decision process. Project-specific NEPA and CEQA documents may be needed for some of the proposed restoration projects. Other projects may fall within an existing EIS or EIR.

Clean Water Act (CWA) (Federal Water Pollution Control Act),
33 U.S.C. Section 1251, et seq.

The objective of the Clean Water Act (*Federal Water Pollution Control Act, 33 U.S.C. § 1251 et seq.*) is to restore and maintain the chemical, physical, and biological integrity of the nation's water. The CWA is the principal statute governing pollution control and water quality of the nation's waterways. To this end, Section 404 of the CWA requires a permit from the U.S. Army Corps of Engineers (COE) for the discharge of dredge or fill material into waters of the United States, including most wetlands. Section 401 of the CWA requires states to certify that any federally permitted or licensed activity that might result in a discharge to waters of the United States, including issuance of a Section 404 permit, would not violate applicable water quality standards established by the states. In California, Section 401 water quality certification program is administered by the **Regional Water Quality Control Boards**. Together, the statutory authority of NEPA and CWA regulate most types of work conducted in wetlands.

National Park System Resource Protection Act, 16 USC 19jj

Public Law 101-337, the Park System Resource Protection Act. (*16 USC 19jj*), requires the Secretary of the Interior to assess and monitor injuries to NPS resources. The Act specifically allows the Secretary of the Interior to recover response costs and damages from the Responsible Party causing the destruction, loss of, or injury to park system resources. This Act provides that any monies recovered by the NPS may be used to reimburse the costs of response and damage assessment and to restore, replace or acquire the equivalent of the injured resources.

Coastal Zone Management Act (CZMA), 16 U.S.C. 1451, et seq.,
15 CFR Part 923

The goal of the federal CZMA is to preserve, develop and, where possible, restore and enhance the nation's coastal resources. The federal government provides grants to states with federally-approved coastal management programs. The State of California has a federally-approved program. Section 1456 of the CZMA requires that any federal action inside or outside of the coastal zone that affects any land or water use or natural resources of the coastal zone shall be consistent, to the maximum extent practicable, with the enforceable policies of approved state management programs. It states that no federal license or

permit may be granted without giving the State the opportunity to concur that the project is consistent with the state's coastal policies. The regulations outline the consistency procedures.

The Trustees do not believe that any of the proposed projects would adversely affect the state's coastal zone. However, to comply with the CZMA, the Trustees intend to seek the concurrence of the State of California that their preferred projects are consistent to the maximum extent practicable with the enforceable policies of the state coastal program.

Endangered Species Act (ESA), 16 U.S.C. 1531, et seq., 50 C.F.R. Parts 17, 222, 224

The federal ESA directs all federal agencies to conserve endangered and threatened species and their habitats and encourages such agencies to utilize their authorities to further these purposes. Under the Act, the National Marine Fisheries Service (NMFS) and the USFWS publish lists of endangered and threatened species. Section 7 of the Act requires that federal agencies consult with these two agencies to minimize the effects of federal actions on endangered and threatened species. Prior to implementation of these projects, the Trustees would conduct Section 7 consultations in conjunction with Essential Fish Habitat (EFH) consultation.

As noted in the RP/EA, several federal and state-listed species frequent the areas impacted by the oil spill. They are also in areas where the Trustees are considering restoration projects. Some listed species, such as the California brown pelican and western snowy plover, would benefit from the proposed restoration projects. Should it be determined that any of the proposed projects would adversely affect a threatened or endangered species, the Trustees would either redesign the project or substitute another project.

National Marine Sanctuaries Act (16 U.S.C. 1431 et. seq.)

Under the National Marine Sanctuaries Act the Secretary of Commerce is authorized to designate discrete areas of the marine environment as National Marine Sanctuaries to protect distinctive natural and cultural resources whose protection and beneficial use requires comprehensive planning and management. The purpose of the Act is to identify, designate, and manage areas of the marine environment of special national significance due to their conservation, recreational, ecological, historical, research, educational, or aesthetic qualities. The goals of the Act are to provide enhanced resource protection through conservation and management of the Sanctuaries that complements existing regulatory authorities; to support, promote, and coordinate scientific research on, and monitoring of, the site-specific marine resources of the Sanctuaries; to enhance public awareness, understanding, appreciation, and wise use of the marine environment; and to facilitate, to the extent compatible with the primary objective of resource protection, multiple uses of the National Marine Sanctuaries. The Act provides authority for comprehensive and coordinated conservation.

Magnuson-Stevens Fishery Conservation and Management Act, 16 U.S.C. 1801 et seq.

The federal Magnuson-Stevens Fishery Conservation and Management Act as amended and reauthorized by the Sustainable Fisheries Act (Public Statute 104-297) establishes a program to promote the protection of essential fish habitat (EFH) in the review of projects conducted under federal permits, licenses, or other authorities that affect or have the potential to affect such habitat. After EFH has been described and identified in fishery management plans by the regional fishery management councils, federal agencies are obligated to consult with the Secretary of Commerce with respect to any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by such agency that may adversely affect any EFH.