

C 1007

**Executive Summary  
Hill Slough West  
Habitat Restoration  
Demonstration Project**

**Applicant:**

California Department of Fish and Game  
Bay-Delta and Special Water Projects Division  
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**Project Description:** The Hill Slough West Habitat Restoration Demonstration Project is a proposal to restore tidal action to approximately 200 acres of seasonal and permanent wetlands in northeastern Suisun Marsh. The property is located at the Hill Slough Wildlife Area which is owned and managed by the California Department of Fish and Game (DFG). Implementation of the plan will be carried out in four phases over approximately five years. The estimated total cost for Phase I is \$200,000. The purpose of this proposal is to request funds in the sum of \$200,000 for Phase I. The project will be a collaborative effort to restore a transition from perennial aquatic habitat in Hill Slough to low marsh, high marsh, and upland transition. Partners such as the Department of Water Resources (DWR) will play key roles in implementing the overall plan. This proposal will provide the foundation for this collaborative effort to move forward.

**Primary benefits:** This proposal addresses two of the listed priority habitats; tidal saline emergent wetlands habitat and perennial grasslands. It also addresses primary species; winter-run and spring-run chinook salmon, delta smelt, and splittail and secondary species; migratory birds such as waterfowl. Benefits of the project include; Reduced entrainment of fish into unscreened diversions, Reversal of physical isolation of marsh plain, Restored ecological processes and functions associated with tidal wetlands, Restored habitat for restoration of rare plant communities, Increased wintering waterfowl use by diving ducks, and, reduced subsidence.

**Proposed Approach:** Our basic approach is to promote a self-sustaining marsh ecosystem through restoration of natural edaphic, topographic, and tidal conditions within an area that has been leveed off from tidal influence. Primary restoration methods will entail selective or complete levee removal, limited excavation of higher order channels, limited replanting of sensitive plant species, and a program of invasive species management. In Phase I, a topographic survey and hydrologic evaluation will be completed. An engineering level plan and refined cost estimate for development will be prepared based on a thorough understanding of the site's hydrology and topography. An appropriate mosaic of habitats and interpretive actions will be prescribed. There are three other phases; Phase II, and environmental documentation, Phase III, restoration plan implementation, Phase IV, reestablishment of rare plant communities, commencement of monitoring, and interpretive program implementation. There are eight tasks identified for Phase I that will take place over the course of eighteen months. Schedule estimates are based on the assumption that the project would be approved and Phase I would begin on October 1, 1998.

**Project Justification:** From the mid-1880s to the early 1900s over 90 percent of the tidal wetland in the Suisun Marsh and Bay system has been converted to a non-tidal condition. The loss of the tidal connection has reduced or interfered with ecological processes and functions critical for sustaining a healthy aquatic ecosystem. A lack of support for the Bay-Delta aquatic foodweb and foodweb organisms contributes to unhealthy fish populations. A lack of emergent wetlands reduces the amount of potential rearing habitat for chinook salmon, delta smelt, and splittail. Reductions in and fragmentation of this habitat has resulted in reduced populations of California clapper rail, salt marsh harvest mouse, and rare plants dependent on high tidal marsh and adjacent upland transition. The project will help reverse the above conditions and provide CALFED with extremely valuable information to forecast restoration costs.

**Budget Costs and Third Party Impacts:** Funds for the completion of Phase I would be spread out over two federal fiscal years. An initial cost of \$180,000.00 would be allocated in the first year. An additional \$20,000.00 would be allocated in year two. Phase I should be completed by March 2000. Future will be primarily funded using a portion of approximately \$3 million that is set aside from the Suisun Marsh Mitigation Agreement. The funds provided by CALFED will help leverage the funding provided through the mitigation agreement to enable Suisun Marsh wetland managers to restore a larger mosaic of tidal wetlands in a critical part of the Suisun Marsh. No significant third party impacts were identified for this project

**Applicant Qualifications:** The DFG has extensive experience in developing and managing fish and wildlife habitat on numerous wildlife areas throughout the State including 15,000 acres in the Suisun Marsh. The principle investigator has worked in the Suisun Marsh for 18 years and has experience with wetland development in the Suisun Marsh. Mr. Bob Garrison is the DFG's statewide coordinator of interpretive services; Ms. Sandy Morey is the DFG's endangered plant program coordinator; Mr. Carl Wilcox is a DFG expert in environmental review and regional fish and wildlife and wetlands planning. Ms. Brenda Grewell is a DWR plant/wetland ecologist with 14 years of professional experience in California wetlands including 10 years in the Suisun Marsh.

**Monitoring and Data Evaluation:** Monitoring will include, but will not be limited to; water quality in Hill Slough; fisheries occurrence in the restored tidal wetland; wildlife use patterns in all of the restored areas; and vegetation growth, trends, and recruitment throughout the restoration area to monitor plant composition and makeup. As part of the monitoring plan several testable hypotheses will be developed. Those hypotheses will be related to how fish use the restored tidal wetland as well as how special status plants survive and reproduce. Monitoring will be conducted by IEP staff and qualified staff and volunteers associated with the Hill Slough Wildlife Area.

**Compatibility and benefits to CALFED non-ecosystem objectives:** The proposed project is compatible with the objectives of the other CALFED programs and does not conflict with any of the potential water and storage conveyance alternatives. The project will help address objectives of the Water Quality Program. Local community support is strong; support from wetland managers in the Marsh will be sought as a component of the project. The proposal also dovetails with long-term wetland goals set for the Central Valley and Delta by the Central Valley Habitat Joint Venture program. The project dovetails with long-term wetland goals being developed for San Francisco Bay wetlands and the tidal wetlands recovery efforts of the USFWS. It is consistent with the visions, implementation objectives, and targets for CALFED's ERPP.