

# Levee Demonstration Project

## Project

DWR is currently planning a multi-purpose levee improvement/habitat development project on Sherman Island. This comprehensive project will create a 1000 foot by 50 foot berm along a portion of the south-east levee of Sherman Island (see attached map and cross section). The goals of this project will be to improve flood protection, provide mitigation through habitat creation, demonstrate the feasibility of habitat corridors in the Delta, and demonstrate the beneficial reuse of dredge material.

The San Joaquin River levee fronting on the southerly side of Sherman Island suffers from some serious stability problems as well as exposure to erosion from waves generated across long fetches of the San Joaquin River. DWR, through the SB 34 Program, has been working with Reclamation District 341 on Sherman Island to improve the island's levee system. This project will improve erosion control and levee stability while creating habitat.

Initiated in 1991, the Temporary Barriers Project is a test program to help improve conditions for local agricultural diversions and fish migration in the south Delta. As part of DWR's permit application to extend the program and install a barrier in Grant Line Canal, the Department is currently developing a mitigation plan agreeable to the regulatory agencies. The plan will create the desired habitat by establishing a vegetated waterside berm to mitigate for potential vegetation changes resulting from installation of the barriers.

DWR has also been an active participant in the upland workgroup of the U.S. Army Corps of Engineers Long-Term Management Strategy program. This project, utilizing recently deposited sediment from the Stockton Deep Water Ship Channel, will be the fourth demonstration of the beneficial reuse of dredged sediment. Future projects should include well designed sediment traps to reduce transportation costs and enhance the availability of non-saline material.

## Proponent

The project proponent is DWR's SB34 Delta Levees and Temporary Barriers programs.

## Coordination

Project participants will include Reclamation District 341, Department of Fish and Game, Central Valley Regional Water Quality Control Board, U.S. Army Corps of Engineers, Long-Term Management Strategy Program, San Francisco Estuary Project, CALFED, and the U. S. Fish and Wildlife Service.

## Funding

Funding will be provided by DWR's Delta Levees and Temporary Barriers programs.

### **Project and Cost Schedule**

Planning/Permitting	11/95 - 6/96	\$ 20,000
Final Design/Plans & Specs	6/96 - 8/96	\$ 50,000
Construction	9/96 - 10/96	\$400,000
Planting	11/96 - 12/96	\$ 20,000
Monitoring	9/96 - 1/99	\$ 50,000

## **Benefits**

**Flood Control:** The tidal wetlands berm will substantially replace the typical crushed rock used for erosion control. The habitat berm will improve levee stability, thus protecting 10,000 acre of valuable wildlife habitat, agriculture, State Water Project lands, Highway 160, and Sherman Island residents, while providing increased reliability to Delta water exports.

**Sediment/Toxicant Retention:** Construction of the berm habitat will include rock stabilization that will promote sedimentation. Growth of hydrophytic vegetation in the constructed wetlands will act as a filter for toxicants, such as agricultural organic runoff and heavy metals, that are in the water column.

**Nutrient Retention/Transformation:** The biogeochemical processes that develop in the wetland sediments will function to absorb and transform nutrients in reduced forms, such as ammonia, to oxidized forms, such as nitrates. Converted nutrients will be absorbed by the hydrophytic vegetation.

**Nutrient Production/Export:** Transformed nutrients that are not absorbed by the hydrophytic vegetation in the immediate wetland area will be released to the water column and transported to other areas of the delta.

**Overall Water Quality:** Water quality will improve to the extent that the acreage of wetlands developed will retain and convert nutrients, and filter toxicants. This will reduce down-river toxicant loads.

**Aquatic Diversity/Abundance:** Aquatic diversity and abundance in the specific areas of the created wetlands will increase as a result of improved habitat quality. Existing habitat conditions are relatively low quality.

**Fish/Shellfish Habitat:** Fish and shellfish habitat will increase in size and quality. Fish habitat will be improved by providing habitat for overhanging shade trees in near island shallows. Construction of the wetlands will stabilize river shallows which are important habitats for fish in the delta. Shellfish habitat will be created in the wetlands and shallow banks.

**Wildlife Habitat:** Wildlife habitat for resident and seasonal species will be increased and substantially improved from the existing habitat conditions.

**Endangered Species:** No specific federally-endangered species are being impacted as a result of the project, but some sensitive plant and animal are indirectly being affected. The wetland creation will provide additional and improved habitat for sensitive species that are wetland dependent in the Delta.

**Ecological Integrity:** The creation of tidal wetlands adjacent to Sherman Island will increase ecological integrity due to connecting fragmented areas of wetlands and creating a continuous corridor of tidal wetland habitat along the San Joaquin River.

**Consumptive Recreation:** The berm site is not proposed specifically for consumptive recreation use. However, the created wetlands would provide some habitat for waterfowl and increase fishery habitat quality that would result in improved hunting and fishing in the Delta.

**Nonconsumptive Recreation:** The improved habitat quality for wildlife and plants would increase area for nonconsumptive recreation such as bird watching and nature photography.

**Uniqueness/Heritage:** The wetland habitat would not create unique habitat, but would increase natural heritage functions and values that have been lost in the delta.

San Joaquin River Side of Levee

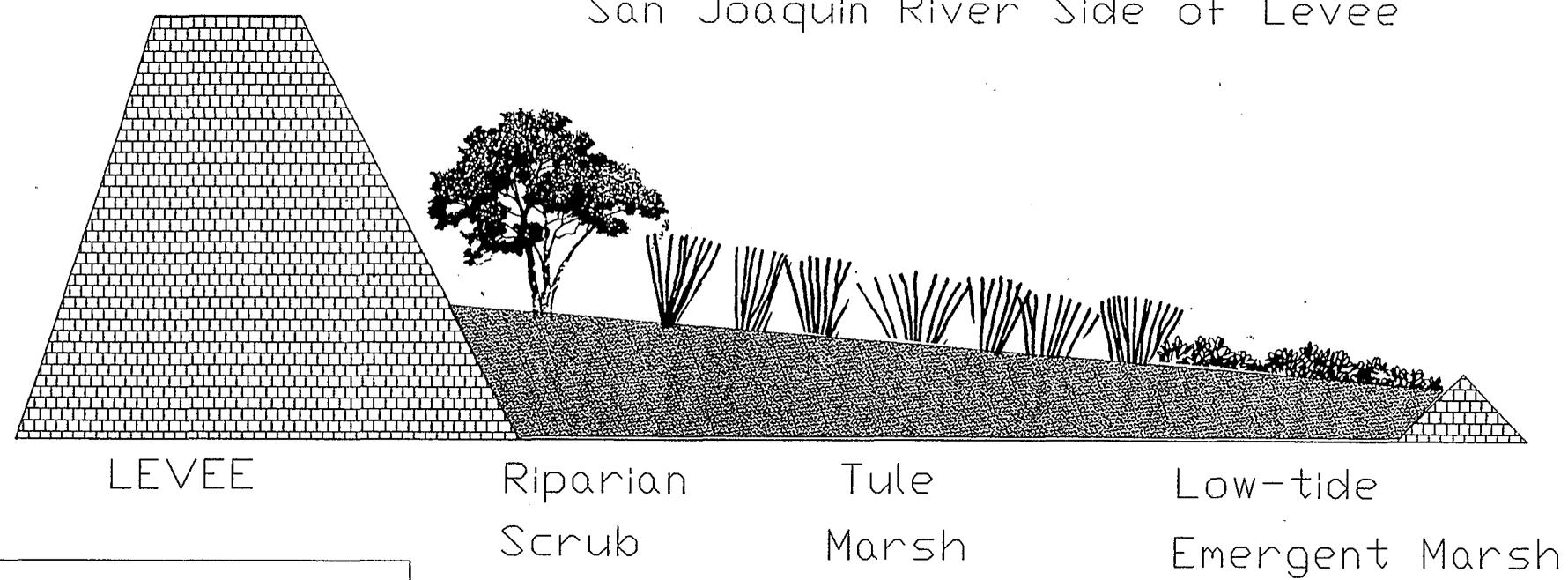


Figure 3-4  
Conceptual Planting Plan

# Project Location

