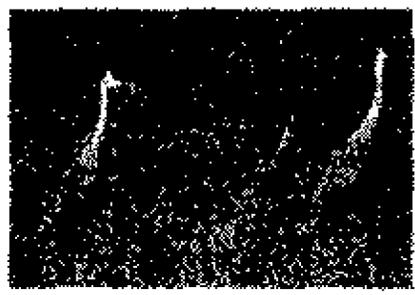
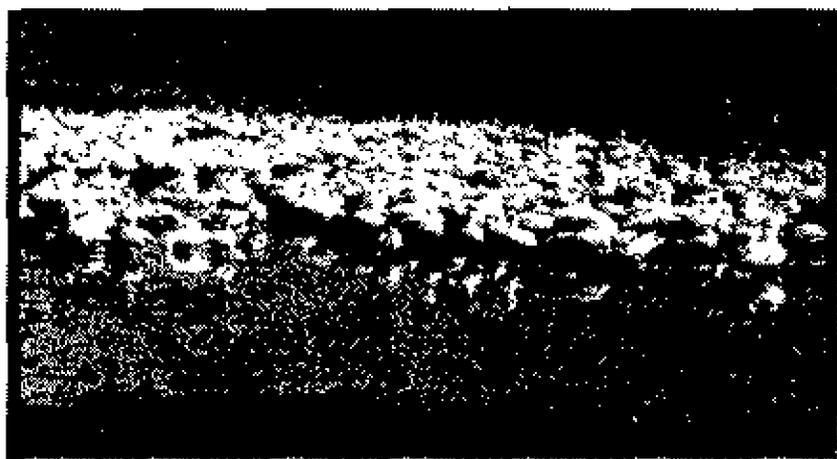


State of California  
The Resources Agency  
DEPARTMENT OF FISH AND GAME

DWR WAREHOUSE

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# HABITAT MANAGEMENT PLAN FOR THE CANAL RANCH FISH AND WILDLIFE MANAGEMENT AREA



REGION 2

July 1997

Douglas P. Wheeler  
Secretary for Resources  
The Resources Agency

Pete Wilson  
Governor  
State of California

Jacqueline E. Schafer  
Director  
Department of Fish and Game

# Habitat Management Plan for the Canal Ranch Fish and Wildlife Management Area

This document was prepared by Mr. Brad Burkholder, Wildlife Biologist with the California Department of Fish and Game, Bay-Delta and Special Water Projects Division, Stockton.

## Executive Summary

One major component of the CALFED Bay-Delta Program is to develop a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system. The Ecosystem Restoration Program Plan (ERPP) Team has developed visions, implementation objectives, and targets for the restoration for aquatic and terrestrial habitats that will enhance and promote natural restoration of the ecological processes and functions necessary for a healthy system. While acreage has been identified by the ERPP Team, locations have not. Lands will be acquired from willing sellers. One such land owner is the Canal Ranch Partners, L.L.C. which currently owns 3,070 acres on Canal Ranch.

In June of 1996, a conceptual habitat management plan was developed for the Canal Ranch Partners, L.L.C. by the Department of Fish and Game entitled "Habitat management Plan for the Canal Ranch Fish and Wildlife Management Area." The purpose of the plan is to restore seasonal wetlands, riparian, and shaded riverine aquatic habitats. The plan also maintains agricultural production while increasing the benefits to fish and wildlife. Implementation of the habitat management plan dovetails with long-term wetland goals set for the Central Valley and Delta by the North America Joint Venture Program. In addition to meeting those goals, there will be a reduction in consumptive water use by shifting to wetland management strategies. This will result in a lower channel depletion and reduced evapotranspiration during critical Delta outflow periods. Implementation of the plan will occur in multiple phases. The purpose of this request is for funding from Category III for Phase I. Phase I will be completed in order to determine what the most effective and beneficial method for development and acquisition would be for CALFED. While habitat restoration is a major component of the CALFED process, the mechanism for accomplishing this has not yet been identified.

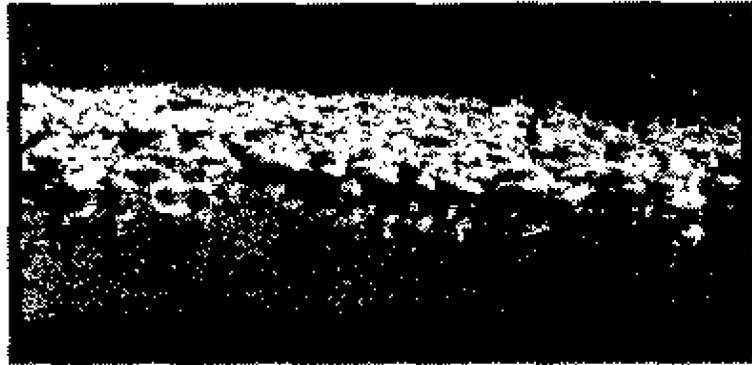
We propose using the Canal Ranch Project as a tool for CALFED to; 1) forecast what the costs of restoration will be and; 2) to analyze and determine what the most effective means for acquisition of lands from willing land owners. While conducting an assessment for cost of the development of the habitat plan, additional funding sources will be solicited to aid in implementation. In addition, this project will help CALFED evaluate the acquisition process and determine incentives that could ensure additional land owners become willing participants in the CALFED process.

The total cost of development and implementation of this project will be dependent upon the forecasted cost of restoration development and the acquisition plan (Phase I). Current estimates range from 10 to 30 million dollars. The costs will be spread out over multiple years and broken out into phases; develop a cost for restoration and acquisition plan (Phase I) \$500,000.00; lease of property (Phase II) \$10,000,000.00; modification of the property including selected excavation, ditching, and internal levee construction and development of water side habitat in Beaver and Hog sloughs (Phase III) \$5,000,000.00 to \$15,000,000.00; and ongoing operation and maintenance (Phase IV) \$500,000.00.

Upon completion of the assessment and plan for acquisition, other agencies (i.e., the U.S. Fish and Wildlife Service and California Department of Fish and Game) and parties (i.e., the Nature Conservancy, Ducks Unlimited, Inc.) that are willing to aid in the funding will be identified. These agencies and parties will share costs with CALFED for the acquisition and implementation of the project. Some of these parties will also play a key role in monitoring and evaluating the site during development and implementation.

Completion of the Canal Ranch Habitat Management Plan provides an excellent opportunity for CALFED to start meeting its goals of ecosystem restoration. In addition to having willing landowners, this project would allow CALFED to not only project what the future costs associated with restoration will be, but refine the acquisition process which will provide great benefits to all future restoration efforts.

# HABITAT MANAGEMENT PLAN FOR THE CANAL RANCH FISH AND WILDLIFE MANAGEMENT AREA



Mr. Brad Burkholder, Wildlife Biologist  
California Department of Fish and Game  
*Bay-Delta and Special Water Projects Division*  
4001 North Wilson Way  
Stockton, California 95205  
Phone (209) 948-7800  
Fax (209) 946-6355  
e-mail [bbholder@delta.dfg.ca.gov](mailto:bbholder@delta.dfg.ca.gov)

## **Participants/Collaborators in Implementation**

Current participants are the Canal Ranch Partner's, L.L.C. and the California Department of Fish and Game. Additional agencies and groups (e.g., the U.S. Fish and Wildlife Service, Bureau of Land Management, the Nature Conservancy, and Ducks Unlimited, Inc.) will be sought as potential collaborators.

## **RFP Project Group Type**

This proposal is requesting funds for services to develop a plan of acquisition and construction costs for implementation or restoration efforts.

## **Project Description**

### **Project Description and Approach**

The Habitat Management Plan (HMP) for the Canal Ranch Fish and Wildlife Management Area was developed in June of 1996 to increase benefits to water dependent wildlife, develop riparian forest to benefit nesting Swainson's hawks and other neotropical migrants, improve water side habitat for fish, and address fishery concerns related to entrainment of listed fish species in a manner which allows continued management of critical wetlands. The HMP was developed for the owners of Canal Ranch, currently Canal Ranch Partners, L.L.C., to improve its value for fish and wildlife and increase public recreational opportunities for activities such as bird watching, nature study, and hunting. The HMP consists of developing a cost for the design and development; leasing, on a long term basis, the 3,070 acre Canal Ranch (Figure 1); modifying land uses to manage it as optimal fish and wildlife habitat, developing shaded riverine aquatic (SRA) habitat on its north and south boundaries in Beaver and Hog sloughs in a manner that does not result in significant redirected impacts on other aquatic resources nor jeopardizes levee stability, and reducing the volume of diversion to reduce entrainment of fish and increase flows.

The HMP proposes to develop several habitat types including open water, emergent marsh, seasonal wetland, three varieties of riparian forest, and upland as well as maintaining the agricultural traditions of the property. Figure 2 displays the placement of habitats for the Canal Ranch Project site. The HMP development recommendations prescribe a plant community composition and juxtaposition that provides levels, or ranges, of benefits through substantially enhancing conditions for a broad variety of wildlife to more limited benefits to narrower groups of wildlife such as wintering waterfowl. This program would also modify current water diversion to meet the needs of the restored habitats.

The HMP would be phased to: determine feasibility (including an engineered master plan that will develop costs and a time line for completion) and develop a plan of acquisition (Phase I); acquisition of the property (Phase II); modification of the property (based upon the results of Phase I) including selected excavation, ditching, and internal levee construction and development of water side habitat in Beaver and Hog sloughs (Phase III); and ongoing operation and maintenance (Phase IV). Reinforcing exterior levees to Bulletin 192-82 standards is not specifically included as part of this proposal but the HMP will not conflict with activities by Canal Ranch Partners, L.C.C. to complete those levee improvements if they choose to do so.

The purpose of this proposal is to request funds for Phase I. Phase I provides an excellent opportunity for CALFED to determine what the costs of restoration will be and how to efficiently develop a plan for acquisition from willing sellers. Acquisition of property from willing land owners will be a critical issue in fulfilling and meeting the ecosystem restoration goals of CALFED. Because Canal Ranch Partners, L.L.C. are willing participants, this

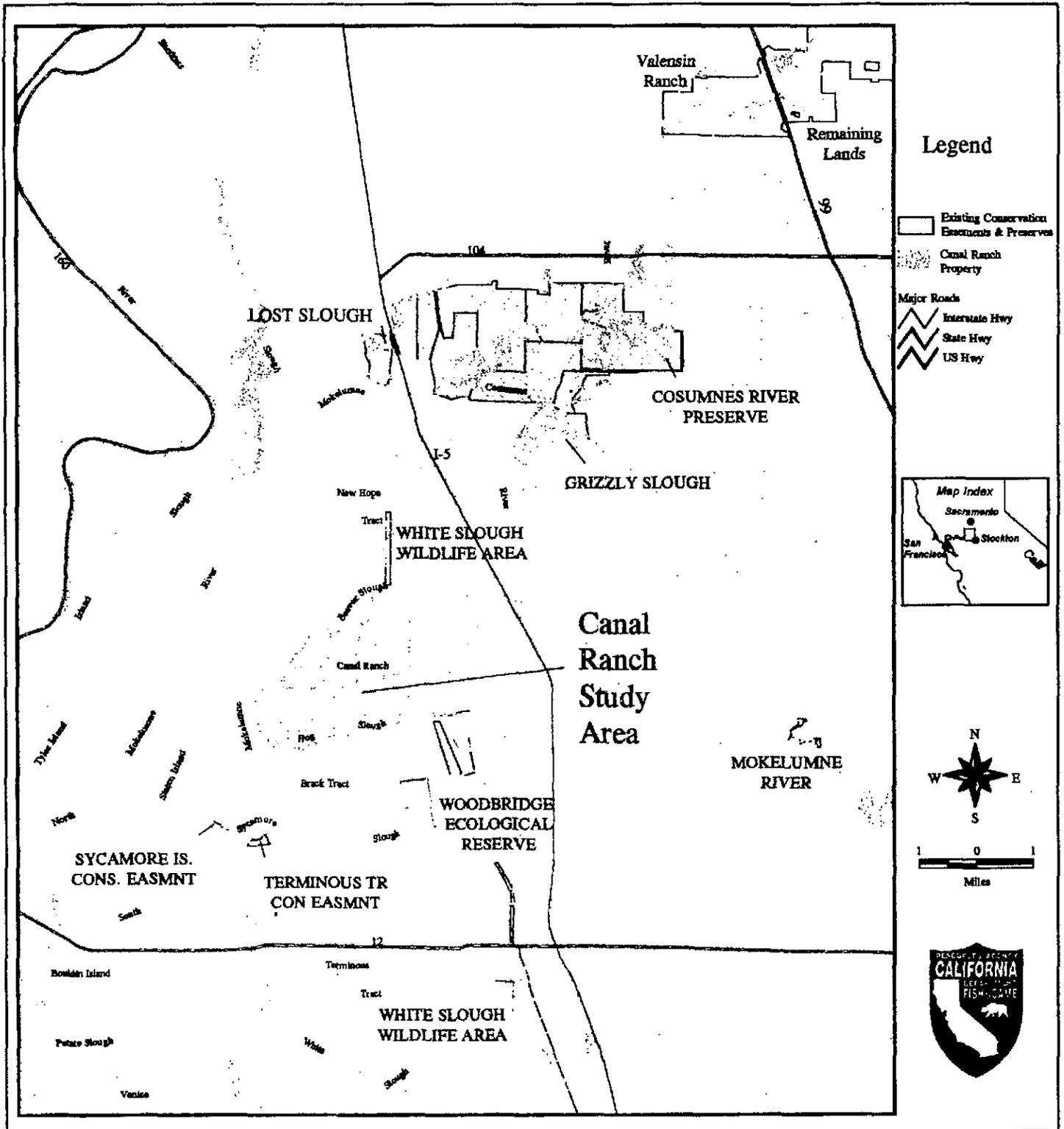


Figure 1. The location of the proposed Canal Ranch Fish and Wildlife Management Area.

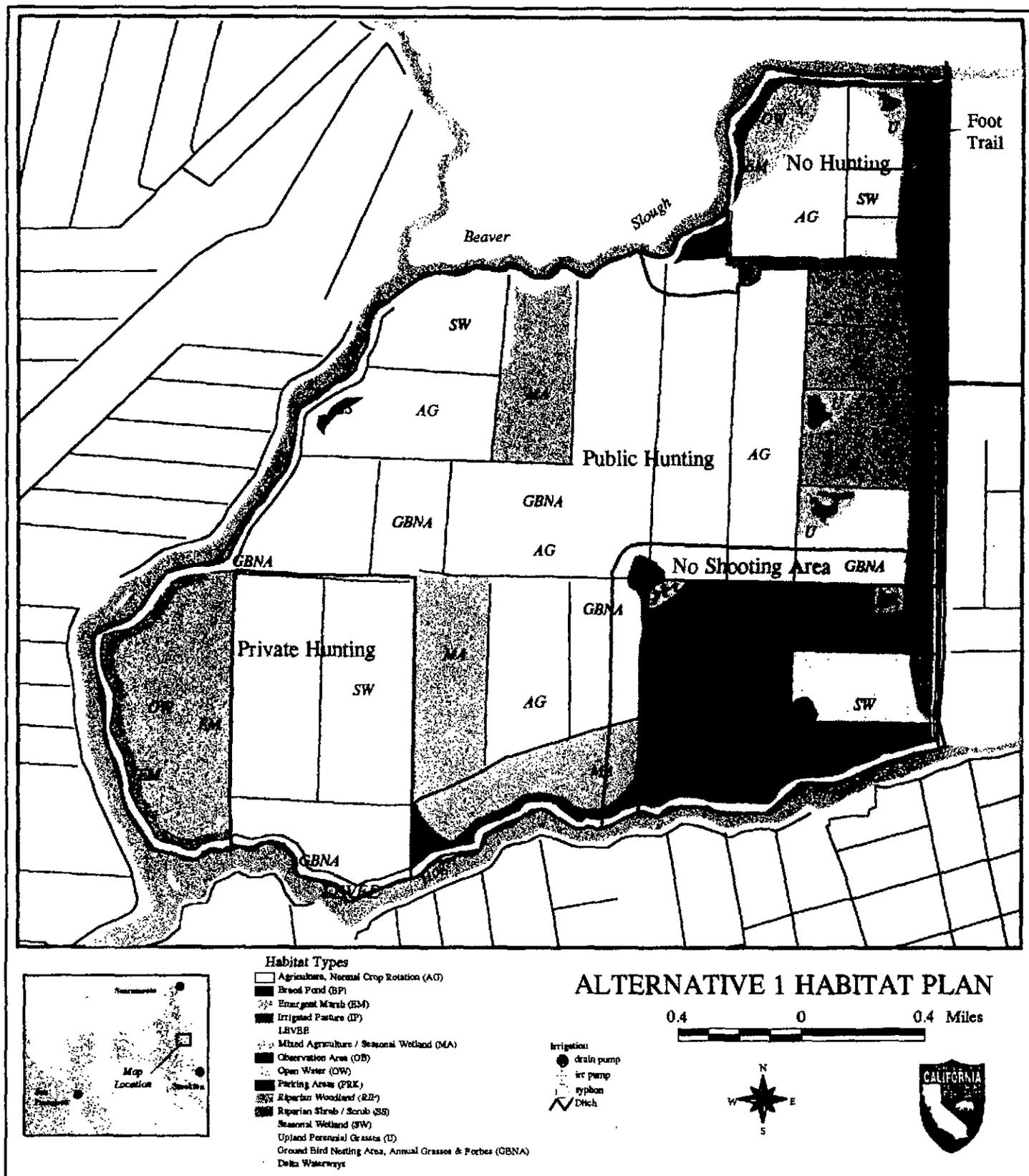


Figure 2. The habitat management plan for the proposed Canal Ranch Fish and Wildlife Management Area.

provides an excellent opportunity for CALFED to investigate the various methods for land acquisition and determine if current techniques and regulations are adequate or require modifications. This project will not only help CALFED take the first step to meet its goals of restoration, it will serve as a model to determine what the development costs of future restoration efforts of this magnitude will be, as well as, develop a plan of acquisition with associated costs which must be identified for any future projects that CALFED becomes involved in. In addition to developing a plan for acquisition, CALFED will have a much better understanding of costs associated with restoration plans, designs, and development, all of which will provide excellent baseline information for future projects it becomes involved with.

### **Location and/or Geographic Boundaries of Project**

Canal Ranch is a 3,070 acre area located west of Blossom Road approximately four miles southwest of Thornton, in San Joaquin County. The project area is located on Canal Ranch Tract which is south of Beaver Slough, north of Hog Slough, and east of the south fork of the Mokelumne River. An easement in favor of Reclamation District No. 2086 exists that grants the District authority to maintain, improve and repair the levees and drainage systems within the boundaries of the ranch and to levy assessments against the landowners to perform such duties. North of Canal Ranch is the Nature Conservancy's Cosumnes River Preserve. To the south is the Woodbridge Ecological Preserve. The project area has historically been farmed for alfalfa, tomatoes, sugar beets, wheat, and corn. In 1996 the principal crops grown on the property were tomatoes, sugar beets, corn, and wheat.

### **Expected Benefits**

Completion of this project will provide a base line for habitat restoration costs which will allow CALFED to accurately forecast what the costs will be to meet and accomplish the restoration goals in the Sacramento-San Joaquin Delta. Once the cost of development is determined, CALFED will have a better understanding of what it will take to meet its goals for restoration in the Delta. In addition, it will be able to accurately determine what it will take to acquire lands associated with restoration efforts by using everything gained in this pilot study.

The HMP, if implemented, will develop and restore habitats that were once common throughout the Sacramento-San Joaquin Delta which include; seasonal wetland and aquatic, instream aquatic, shaded riverine, riparian, and North Delta agriculture wetlands and perennial grasslands. Species that will benefit from the HMP include winter-run Chinook salmon, delta smelt, splittail, migratory birds, Swainson's hawk, and other neotropical migrants. The proposal also dovetails with long-term wetland goals set for the Central Valley and Delta by the North America Joint Venture program.

In addition to habitat and species benefits, modifying management of this land will reduce consumptive water use by shifting to wetland management strategies which result in lower channel depletion and reduced evapotranspiration during critical Delta outflow periods. The implementation of the HMP would result in a 69 percent decrease (9,100 acre feet to 2,800 acre feet) in diversions which would result in less entrainment of species such as the winter-run Chinook salmon, splittail, and delta smelt. The habitat management strategy would additionally increase the integrity of the structural levee system by reducing subsidence as well as significantly reduce the amount of toxins released in Hog Slough. This reduced water depletion can translate into improved flows in the south fork of the Mokelumne River, improving water supplies in the Delta and, potentially, downstream of the Delta.

The creation of shallow water and shaded riverine areas on the north and south boundaries will provide needed spawning and rearing habitat for listed species such as delta smelt and splittail, as well as rearing habitat for Chinook salmon. In addition, increased water quality, sediment supply, and more suitable water temperature levels will result in Beaver and Hog sloughs and, ultimately, the south fork of the Mokelumne River. Nutrient retention and production would also be expected to increase with the implementation of this project.

Seasonal wetland and aquatic habitat for species such as waterfowl, giant garter snakes, sandhill cranes, and tricolored blackbirds, to name a few, will increase. Water management practices would be modified so that no diversions would be expected during critical winter-run out-migration periods in March and April. In addition, both consumptive and non-consumptive uses would increase in the area due to the increased flora and fauna throughout the project area. This project could also be used as a pattern to develop other areas within the Delta when developing similar projects.

Roosting and nesting habitats for the Swainson's hawk and neotropical migrants would greatly benefit with the development of riparian habitats adjacent to the wetlands and shallow water habitats.

Secondary benefits from the implementation of the HMP would be that tidal wetlands could be developed to the property just to the east of Canal Ranch if the landowners chose to do so. Other benefits would be that the HMP would offer an excellent compliment to the Cosumnes River Preserve to the north and the Woodbridge Ecological Reserve to the south. This may peak the interest of additional parties to get involved in additional restoration efforts and offer the first step in developing a larger scale, more contiguous restoration effort that would eventually join the Cosumnes River Preserve and the Woodbridge Ecological Reserve.

## **Background and Justification**

The Sacramento-San Joaquin Delta provides important habitat for Pacific Flyway waterfowl and other water-dependent species; sensitive species of wildlife such as the greater

sandhill crane, Aleutian Canada goose, and Swainson's hawk; and other groups of wildlife such as neotropical, and resident and wintering songbirds. The existing benefits to fishery resources of this area's habitat is limited since most of it is restricted to the land side of massive exterior levees that are maintained to minimize habitat at the land-water interface. Furthermore, water diversions from adjacent channels are generally unscreened and can result in the entrainment of fish such as the endangered winter-run Chinook salmon and the threatened delta smelt. Water diversions for agriculture purposes and evapo-transpiration associated with growing crops can also deplete water supplies in adjacent channels affecting flows in the Delta and downstream of the Delta particularly in the spring and summer months.

The mission of the CALFED Bay-Delta Program is to develop a long-term comprehensive plan that will restore ecological health and improve water management for beneficial uses of the Bay-Delta system. The Ecosystem Restoration Program Plan (ERPP) Team, one component of CALFED, has developed visions with goals and targets for the restoration of aquatic and terrestrial habitats that will enhance and promote natural restoration of the ecological processes and functions necessary for a healthy system. While acreage amounts have been identified by the ERPP Team, site-specific restoration efforts will be dependent upon willing land owner participants. The Canal Ranch Partners, L.L.C. are currently putting 3,070 acres on the table for restoration.

In June of 1996, a conceptual habitat management plan was developed for the Canal Ranch Partners, L.L.C. by the Department of Fish and Game entitled "Habitat management Plan for the Canal Ranch Fish and Wildlife Management Area." This plan identifies a composition and juxtaposition of various habitats under adaptive management giving it the ability to be modified should it be deemed necessary or warranted. The HMP would be phased to develop a plan of acquisition and determine feasibility (Phase I); allow lease (conservation easement) or other acquisition of the property (Phase II); modification of the property including selected excavation, ditching, and internal levee construction and development of water side habitat in Beaver and Hog sloughs (Phase III); ongoing operation and maintenance (Phase IV).

The Canal Ranch Project will provide CALFED with extremely valuable information to; 1) forecast what the costs of restoration will be and; 2) to analyze and determine what the most effective means for acquisition of lands from willing land owners will be and investigate what could be done to entice additional land owners. While conducting an assessment for cost of the development of the habitat plan, additional funding sources will be solicited and identified to aid in implementation. In addition, CALFED will have the opportunity to determine what the most effective method for land acquisition would be and allow it to review the current regulations for land acquisition and determine if revisions might need to be made so that the process could be made more efficient and offer more incentives that would entice additional land owners to become willing participants in the CALFED process.

## Proposed Scope of Work

Phase I, feasibility and acquisition plan, could be completed within one year. Once the plan of acquisition is determined, which could take less than one year, a contract would be written up between the parties involved. Implementation of the habitat management plan, or a modified version, would begin and take place over multiple years. Habitat restoration will be phased. Phases are listed in Table 1.

## Monitoring and Data Evaluation

Progress of restoration will be monitored. Monitoring will include, but will not be limited to; water quality in Beaver Slough, Hog Slough, the south fork of the Mokelumne River, and downstream in the Delta; fisheries occurrence in the developed aquatic habitats along Beaver and Hog sloughs; 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.

## Implementability

The Canal Ranch Partner's, L.L.C. are willing to participate in the management plan developed in 1996. The land is currently in agriculture production (tomatoes, sugar beats, corn, and wheat) but has the potential to produce of grapes. Upon completion of a plan of acquisition and cost of design that is agreed upon by Canal Ranch Partner's, L.L.C., the management plan could move forward immediately. Contracts between all parties would be written, any necessary permits would be issued, and easements would be developed. Construction would then begin and be designed to be completed after seven years.

## Costs and Schedule to Implement Proposed Project

### Budget Costs

The estimated cost for the entire project from start to finish is 16 to 26 million dollars. A break down of the costs for the four phases are:

Phase I (feasibility and plan of acquisition)	\$500,000.00
Phase II (acquisition)	\$10,000,000.00
Phase III (construction)	\$5,000,000.00 to \$15,000,000.00
Phase IV (operation and maintenance)	\$500,000.00

Table 1. Schedule for Habitat Restoration on the Canal Ranch Fish and Wildlife Management Area.

	Phase I	Phase II	Phase III	Phase IV
Year 1	Design cost and plan of acquisition	Solicit additional agencies and other potential funding sources	Ground surveys for refining design plan	
Year 2		Acquire Canal Ranch	Begin construction and restoration; interior levees, ditches, agriculture, riparian, wetlands	Agriculture
Year 3			Complete construction of interior levees and begin final restoration plantings	Interior levee maintenance, water control structures, agriculture planting and harvest, flooding of restoration areas
Year 4			Complete riparian plantings, brood pond development, emergent marsh	Levee and water control maintenance, field preparation
Year 5			Complete seasonal wetland, grasslands	Levee, water control, and site maintenance
Year 6			Complete all plantings of restoration areas	Brood pond maintenance if necessary and overall site maintenance
Year 7			Re-evaluate planting efforts and make additions and modifications as necessary	same

**Schedule Milestones**

Funds for the completion of Phase I would be spread out over one year. An initial cost of \$100,000.00 would be allocated upon the signing of the contract. After three months a

written progress report will be submitted and an additional \$100,000.00 will be allocated. Phase I should be completed by December of 1998 and the final \$300,000.00 will be paid.

### **Third Party Impacts**

Impacts that may result from the implementation of this management plan include; minor decrease in the local economy from the reduction of agricultural production and potentially limiting the neighboring agriculture fields pesticide and herbicide applications. These impacts will be negligible because the plan involves continuing agricultural production on a large portion of the area. The configuration of the restored habitats will be such that they will not be impacted from herbicide and pesticide drift

### **Applicant Qualifications**

The California Department of Fish and Game has extensive experience in developing and managing fish and wildlife habitat through the numerous wildlife areas and conservation easements.

### **Compliance With Standard Terms and Conditions**

No specific contractual terms and conditions are required for implementation of Phase I of the plan at this time. Should this project move forward, all terms and contracts will be written up and submitted to CALFED for approval.