

**Canal Ranch Habitat Restoration,
Phase III
Demonstration Project**

Prepared in Response to:

**CALFED Bay-Delta Program
2001 Proposal Solicitation Package
Ecosystem Restoration Projects and Programs**

Applicant:

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Type of Organization:

State Agency

Implementation Participants/Collaborators:

Current participants include the Canal Ranch Partner's, L.L.C. and the California Department of Fish and Game. Implementation, guidance, and assistance will be provided by the U.S. Fish and Wildlife Service, Bureau of Land Management, Ducks Unlimited, Inc., and the Natural Resource Conservation Service.

EXECUTIVE SUMMARY

Canal Ranch Habitat Restoration, Phase III- Demonstration Project

Amount Requested: \$12,015,265

Applicant: California Department of Fish and Game, Central Valley Bay-Delta Branch, 4001 North Wilson Way, Stockton, California 95205, Mr. Brad Burkholder, Wildlife Biologist, Phone (209) 948-7800, Fax (209) 946-6355, E-mail bholder@delta.dfg.ca.gov

Participants/Collaborators in Implementation: Current participants include the Canal Ranch Partner's, L.L.C. and the California Department of Fish and Game. Implementation guidance and assistance will be provided by the U.S. Fish and Wildlife Service, Bureau of Land Management, Ducks Unlimited, Inc., and the Natural Resource Conservation Service.

Project Description: Phase III of the Canal Ranch Habitat Restoration Demonstration Project is for next phase funding. This phase of the project is for acquisition of the Canal Ranch Tract through a permanent conservation easement or in fee purchase. The Department of Fish and Game (DFG), with the landowners will develop a plan of acquisition. If a permanent easement is acquired it will include terms and conditions for development, operation, and maintenance of the area. DFG will continue to work with its collaborators and other interested parties to identify funding partners to assist in completing the project.

Hypothesis: Acquiring and restoring Canal Ranch to a mosaic of seasonal and permanent wetlands and riparian areas in association with wildlife friendly agriculture will aid in the recovery of listed and special status plant and animal species in the Delta.

Primary Benefits: This project will benefit the Sacramento/San Joaquin Delta Ecological Management Zone by restoring land in the eastern Delta. The restoration of this property will benefit listed plant species, fall-run chinook salmon, delta smelt, splittail, black rail, Swainson's hawk, greater sandhill crane, and other listed and special status species.

Proposed Approach: The basic approach is to acquire the Canal Ranch property and restore it to permanent and seasonal wetlands, riparian along the edges, agriculture mixed throughout managed seasonal wetland, and upland adjacent to the agriculture. Phase I, currently in progress, includes the topographic surveys needed to guide the ultimate site restoration. Phase II, scheduled to begin later this fall, involves beginning a public participation outreach element to also help guide the ultimate restoration and management of Canal Ranch.

Coordination with CALFED ERPP Goals: This project will promote three of the six Strategic Goals. Goal 1-At Risk Species: this project will help recover several listed Delta species. Goal 3- Harvestable Species: this project will aid in enhancing populations of wintering waterfowl, and Goal 4-Habitats: the project will help species recovery and restore native communities and provide public access, recreation, and educational opportunities. The project will address uncertainties related to freshwater marsh and managing lands using wildlife friendly methods.

PROJECT DESCRIPTION

Statement of the Problem

Problem: Early European settlers in California reclaimed the Sacramento-San Joaquin Delta for agriculture. Coupled with the channelization of the rivers and sloughs of the Delta, this resulted in the loss of 90 percent of the wetlands. The loss of the wetland connection has reduced or interfered with ecological processes and functions critical for sustaining a healthy ecosystem. A lack of support for the aquatic food web and food web organisms contributes to unhealthy fish populations. A lack of shallow water and shaded riverine habitats reduces the amount of rearing habitat for chinook salmon, delta smelt, and splittail. Reduction in and fragmentation of seasonal wetlands, riparian, and associated uplands has resulted in reduced populations of waterfowl, shorebirds, sandhill cranes, brush rabbits and rare plants dependent on these habitats. Historical reclamation of the Sacramento-San Joaquin Delta for agriculture has greatly reduced the fish and wildlife habitats once associated with the Delta and their values. Some agricultural practices have led to the heavy subsidence of peat soils in the Delta which increases the risk for structural levee failures. The project will help reverse the above conditions and provide CALFED with extremely valuable information to forecast restoration costs.

Objectives: Our main objective is to acquire and restore Canal Ranch as proposed in the Canal Ranch Fish and Wildlife Habitat Management Plan (HMP). The HMP promotes the development of a complex of natural communities while still maintaining agricultural production.

Conceptual Model: Acquisition and restoration of Canal Ranch will reduce subsidence and consumptive water use by shifting to wetland management strategies. In addition, development of permanent waterside habitat areas and modifying agricultural management practices will enhance spawning and rearing habitat for listed species such as the splittail and delta smelt. Project implementation will increase foraging habitat for sandhill cranes, Swainson's hawks, and wintering waterfowl.

Primary restoration methods will involve construction of levees, excavation of interior sloughs, ponds, and ditches, limited planting of sensitive plant species, and a program of invasive species management.

Our approach to restoration of Canal Ranch is to prescribe a plant community composition and juxtaposition based upon existing site conditions. Based upon those conditions and discussions with habitat and species experts, we designed a conceptual plan in 1996 that will maintain a viable agricultural practice while increasing the benefits to fish and wildlife. Based upon site visits, it was clear that topography and soils of the site varied greatly from east to west. The topography is clearly lower on the western two thirds of the site which are dominated by peat soils compared to the eastern third which is dominated by more mineral soils.

The basic concept of the HMP is to implement permanent wetlands in the lowest parts of the

property and develop management practices for the entire area that promote fish and wildlife use. Examples include wetlands such as emergent marsh and seasonal wetland in the lowest parts of the property, riparian along the edges, agriculture mixed throughout managed seasonal wetlands, and upland adjacent to the agriculture. By developing a plant composition and juxtaposition such as this, subsidence could be minimized and, in some cases, may be reversed by increased accretion and peat regeneration. In addition, management practices would be clearly developed to maximize the benefits to wildlife. Such practices might include planting times for the crops, residual grain amounts in the agriculture fields, crop types permitted, harvest/mowing schedules, and flooding/drainage schedules.

By restoring natural habitats and having requirements to the agriculture, species such as the Swainson's hawk, waterfowl, and neotropical migrants would benefit directly with the increase in available habitat. Nesting species such as Swainson's and waterfowl would benefit because suitable foraging habitat would be available for the Swainson's and adequate water and nesting cover would be available for waterfowl. Other species such as neotropical migrants, giant garter snakes, and greater sandhill cranes would benefit as well because of the increase in available habitat. Water side habitat improvements and restoration would benefit species such as the splittail and delta smelt by providing shaded riverine and shallow water

Hypotheses Being Tested: Our hypotheses is that by modifying the current land use and management of the property, we can increase the value to fish and wildlife and, potentially, reverse subsidence through natural processes. Should the project move forward into implementation, a detailed monitoring study plan would be developed. Such a plan would be developed with input provided by the USGS who are conducting small scale projects of this nature else where in the Delta. We have been unsuccessful in obtaining any results of their studies to date. A monitoring plan for the fish and wildlife would also be developed to monitor use patterns of the site. Surveys would be conducted to monitor Swainson's hawk, wintering waterfowl, and crane use, nesting waterfowl production, as well as surveys to monitor restoration success and invasive species.

Adaptive Management: The interdisciplinary team will be heavily involved throughout the life of the restoration activities. Regular meetings will be conducted to review the progress and status of the site as well as other studies and projects that relate to this project. Modifications will be made accordingly as new information and studies become available.

Educational Objectives: Education is not a primary focus of this project but opportunities exist, such as interpretive centers. Opportunities will be dependent upon who retains ownership of the property. The results of restoration activities and fish and wildlife monitoring will be reported annually as well as any other specific studies conducted on the property.

PROPOSED SCOPE OF WORK

Location and/or Geographic Boundaries of the Project: The 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.

Approach: The Canal Ranch Habitat Restoration Demonstration Project is a proposal to maintain agricultural production while increasing the benefits to fish and wildlife on approximately 3,070 acres of agriculture land in the east Delta. The plan includes the restoration of permanent and seasonal wetlands, riparian along the edges, instream aquatic, shaded riverine aquatic, and north Delta agricultural wetlands and perennial grassland habitats for aquatic and terrestrial species. Implementation of the plan will be carried out in phases over multiple years. The first two phases are currently in progress and will result in detailed topographic surveys and a master HMP. These will provide the foundation for implementation and construction of the project.

For this third phase of the Canal Ranch Habitat Restoration Demonstration Project there are two subtasks scheduled for completion. The first subtask, or Phase IIIA, is to complete a formal appraisal for the property that will provide costs ranging from a conservation easement to in fee purchase of the property. The cost of the first subtask is \$15,265. The second subtask, or Phase IIIB, will be the acquisition of the property through easement or in fee purchase. The estimated cost is \$12,000,000 for in fee acquisition. It should be noted that this estimate may change depending upon the appraisal and do not take into consideration any existing structures or facilities on the property.

Monitoring and Assessment Plans: Monitoring will begin with implementation in Phase IV and continue until all objectives identified in the Master Plan have been met. Status reports will be written each year and submitted for review to the interdisciplinary team and CALFED. Monitoring will include: monitoring of water quality in Beaver and Hog sloughs and the Mokelumne River; wildlife use patterns in all of the habitat areas; emergent marsh and open water vegetation growth, diversity, percent cover, density, and intrusion of emergent marsh into open water habitats; riparian vegetation growth, diversity, survival rates of planted vegetation, percent canopy cover, diameter at breast height, and plant height; seasonal wetland vegetation species diversity, percent composition of species, and percent cover; upland vegetation species diversity and success of native herbaceous cover plantings; wildlife surveys quarterly for the first five years then yearly during portions of the year when targeted special status species are most likely to occur as determined by species experts and DFG; and, fisheries occurrence in the restored in-stream habitats.

Data Handling and Storage: All data collected during the monitoring efforts will be entered into an electronic database from field data sheets, data sheets will be bound and stored with the database at the Department of Fish and Game Central Valley Bay Delta Branch Office in Stockton. Monitoring reports will be developed yearly and presented to the interdisciplinary team for review and then submitted to CALFED.

Expected Products/Outcomes: Annual status reports describing the overall conditions and success of the restoration efforts will be made available. In addition, any special components such as peat regeneration studies, sediment accretion levels, and special status species

abundance will be included in the annual reports or in stand alone reports. This will be determined later in the future by the interdisciplinary team. Opportunities for workshops and seminars exist but no definitive plans have made as of yet.

Work Schedule: It is not feasible at this time to provide a time line for completion of the tasks listed above because acquisition of the property through an easement or in fee purchase is required before implementation of the HMP would take place. Should funds for acquisition of the property be approved through this phase, DFG will develop a plan for implementation and monitoring of the tasks above would begin immediately.

Feasibility: Implementation of the HMP is dependent upon some form of acquisition, be it easement or outright purchase. The owners of the property are open to either approach but restoration activities cannot begin until an acquisition agreement has been made. There may be a potential for incremental restoration but only if there was a clear and concise commitment in place with the landowner to complete the entire HMP.

APPLICABILITY TO CALFED ERP GOALS AND IMPLEMENTATION PLAN AND CVPIA PRIORITIES

ERP Goals and CVPIA Priorities: The HMP will contribute to meeting the visions for shaded riverine aquatic, Delta agriculture, seasonal wetland, and perennial grassland habitats, as well as the vision for the Delta Ecological Zone by increasing the area of these natural habitats and protecting agricultural practices to assist in the recovery of special status fish, plant, and wildlife populations.

Goal 1 - At Risk Species: The Canal Ranch Habitat Restoration Demonstration Project is expected to contribute to the recovery of several listed and special concern species by restoring natural habitats in their range. Species expected to benefit from the project include steelhead (rearing habitat), splittail (spawning and rearing habitats), delta smelt (spawning and rearing habitats), chinook salmon (rearing habitat), Swainson's hawk (nesting and foraging habitats), greater sandhill crane (roosting and foraging habitats), neotropical migratory birds (breeding and foraging habitats), and waterfowl (wintering and breeding habitats).

Goal 3 - Harvestable Species: One of the components of the restoration efforts is provide habitats for wintering waterfowl and offer hunting opportunities. The HMP includes restrictions to the agriculture that are not incompatible with waterfowl and cranes such as prohibiting asparagus, vineyards, and orchards. Management of the agriculture areas will also have guidelines such as residual grain requirements, field size, planting and harvest schedules, and mowing schedules.

Goal 4 - Habitats: Implementation of the project is expected to provide direct benefits through the restoration of fresh emergent wetland, seasonal wetland, Delta sloughs, nontidal perennial aquatic, riparian and riverine aquatic, perennial grassland, and wildlife friendly agriculture habitats.

Goal 5 - Non-native Invasive Species: Management strategies for the control and removal of non-native species will be a major component of the master HMP. Specifics of the management strategy for non-native invasive species cannot be adequately addressed until the interdisciplinary team has had the opportunity to review and revise the conceptual HMP and develop the master HMP. Some components of the strategy might include flooding and discing for plant species and harvest and/or habitat modifications for wildlife species.

Goal 6 - Sediment and Water Quality: The land use changes that result from implementation of the project are expected to facilitate improvement in water quality by reducing toxics entering the south fork of the Mokelumne River.

Relationship to Other Ecosystem Restoration Projects: The Canal Ranch Habitat Restoration Demonstration Project implementation will provide increased fish and wildlife value by complimenting the Nature Conservancy's Cosumnes River Preserve to the north, the DFG Woodbridge Ecological Reserve to the south, White Slough Wildlife Area, as well as the various conservation easements and in-channel island restoration projects in the rivers and sloughs. In addition, the project dovetails with the long-term goals set for the Central Valley and Delta by the North American Joint Venture Program.

Previous Recipients of CALFED and CVPIA Funding: This proposal is for funding for Phase III of a multi-phased project. Phase II was funded by CALFED (Canal Ranch Habitat Ranch Habitat Restoration Phase II, Proposal Number 99-B116) and is currently waiting for an executable contract from the U.S. Fish and Wildlife Service before work begins. Attachment A provides a brief description of the planned activities for Phase II.

System-Wide Ecosystem Benefits: Implementation of this project is expected to provide benefits to fish populations in the Mokelumne River watershed as well as increase breeding waterfowl populations in the East Delta.

QUALIFICATION

The DFG has a long history and extensive experience in the development and management of fish and wildlife habitat. DFG currently manages over 820,000 acres of fish and wildlife habitat in the form of 103 Wildlife Areas and 99 Ecological Preserves, many of which provide habitat for species at risk. In addition, DFG manages numerous conservation easements for habitat improvements throughout the State. The principle investigator, Mr. Brad Burkholder, has been with the DFG Central Valley Bay Delta Branch for eight years, five as a Wildlife Biologist. Since employed with the DFG, he has had experience with the development and monitoring of a variety of habitats. He is currently the principal investigator for the Palm Tract Mitigation Site and Grizzly Slough Restoration Site. The primary duties associated with those projects are compliance monitoring to ensure restoration objectives and mitigation requirements are met. His role in the projects are to conduct site visits, review progress reports, meet with contractors, and provide recommendations to the project proponents for compliance and mitigation needs. Other projects include Off-Stream Storage Investigations and the Delta Island Hunting Program. Tasks include leading the field surveys for mammal

species to conduct a biological assessment and, eventually, contribute to sections of the ETR/S for Off-Stream Storage. For the Delta Island Hunting Program, his duties include management of a public hunting program on Sherman and Twitchell islands in the Delta for pheasants and a late season waterfowl hunt on Twitchell Island.

When the Canal Ranch project is implemented, DFG will be the primary investigator in all aspects of the restoration. Restoration and plantings might be conducted by DFG habitat crews or go out to bid, this will not be determined until the project moves beyond the acquisition phase. Potential collaborators might include Ducks Unlimited, Inc., The Nature Conservancy, and the Wildlife Conservation Board.

COST

Budget: The budget for this third Phase of the Canal Ranch Habitat Restoration Demonstration Project is estimated to be approximately \$12,015,265 (Table 1). The two subtasks associated with Phase III are \$15,265 for the first subtask which will include two months salary for a wildlife biologist at \$42,950 a year, plus benefits, and the cost to conduct the appraisal. Staff time will include meeting with the land owners, potential collaborators, and the Wildlife Conservation Board. The second subtask is estimated to cost approximately \$12,000,000 and will be dependent upon the formal appraisal. The actual cost to CALFED will vary depending upon whether or not any partners can be identified to share the cost of the easement or purchase.

Table 1. Canal Ranch Phase III budget detail.

| Task | Salary | Benefits | Real Estate | Overhead (19.9%) | Total |
|---------------|--------|----------|-------------|------------------|------------|
| collaboration | 7,560 | 1,550 | | 1,815 | 10,925 |
| appraisal | 3,000 | 620 | | 720 | 4,340 |
| acquisition | | | 12,000,000 | | 12,000,000 |
| | | | | TOTAL | 12,015,265 |

Cost Sharing: The Canal Ranch Habitat Restoration Project is located on property owned by the Canal Ranch Partners, L.L.C.. Negotiations are ongoing regarding the acquisition of the property. The preferred alternative is to develop an agreement in which the current land owners retain the title for the property with the placement of easement in perpetuity on it. The easement would allow public access. Potential funding partners have not been identified at this time.

LOCAL INVOLVEMENT

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 (corn, wheat, and asparagus) but has the potential to produce grapes. Upon completion of the public workshops and refinement of the existing plan, the project could move forward immediately. Communications between DFG and Canal Ranch Partner's, L.L.C. are ongoing. Solicitations are ongoing to identify potential funding sources interested in the implementation and/or acquisition. Should acquisition agreements be reached, contracts would be written, all necessary permits would be issued, and easements would be developed.

Other agencies and parties contacted and interested in the project include Ducks Unlimited, Inc., U.S. Fish and Wildlife Service, Natural Resource Conservation Service, Bureau of Land Management, and the Nature Conservancy. San Joaquin County Board of Supervisors and Planning Division, adjacent and nearby landowners, and the Delta Protection Commission were formally notified of our intentions in April of 1999. New letters stating our intentions of this Phase have been sent out (Attachment B).

COMPLIANCE WITH STANDARD TERMS AND CONDITIONS

The acquisition plan will be developed by DFG and the Canal Ranch Partner's, L.L.C.. The appraisal of the property will be conducted by the Wildlife Conservation Board. No specific contractual terms and conditions are required at this time. Should this project move forward, all terms and contracts will be written up and submitted to CALFED for approval.