

# Project Information

2005 Proposal Number: 0086

Proposal Title: **EVALUATION OF GIANT GARTER SNAKE RESPONSE TO CALFED'S ENVIRONMENTAL WATER ACCOUNT PROGRAM: ADAPTIVE MANAGEMENT FOR WILDLIFE FRIENDLY FARMING**

Applicant Organization Name: **United States Geological Survey**

Total Amount Requested: **\$1,187,367**

ERP Region: Sacramento Region

## Short Description

Evaluation of the effects of rice field fallowing on GGS in order to meet the needs for regulatory guidelines for the EWA program.

## Executive Summary

Giant garter snakes (*Thamnophis gigas*) were once found in wetlands throughout the Central Valley from Butte County in the north to Buena Vista Lake in Kern County in the south. These snakes have been extirpated south of Fresno and populations are severely reduced in the remainder of the San Joaquin Valley. Giant garter snakes have adapted to rice agriculture as cultivated wetlands, and significant populations exist throughout the rice production region of the Sacramento Valley, living in irrigation ditches as well as emergent rice fields. Populations of giant garter snakes have been adversely affected by large-scale land use changes that altered or converted their original wetland habitat. New stresses for giant garter snakes would come from agricultural land use changes that would reduce rice agriculture.

Such a stress may result from CalFed's environmental water account (EWA) which would potentially fallow rice land to use the water to protect at-risk fish in the Delta. Because of the potential negative effect of agricultural fallowing on

remaining giant garter snake populations, the U.S. Fish and Wildlife Service issued a Programmatic Biological Opinion on the EWA in January 2004 that specified expectations of CalFed's Ecosystem Restoration Program (ERP) to address a conservation strategy for giant garter snakes. To ameliorate the effects of rice fallowing on giant garter snakes the FWS recommends that permanent wetlands be created to replace lost rice habitat and that water be maintained in the irrigation supply and drainage ditches adjacent to fallow fields. The sufficiency of habitat restricted to these ditches has not been evaluated for maintaining snake populations until the rice is grown again. We propose to address major requirements of the FWS Biological Opinion by evaluating the potential effects of rice field fallowing on giant garter snakes to meet this information need in establishing valid regulatory guidelines for the CalFed EWA program. In addition we propose to assess giant garter snake habitat use in selected habitat restoration projects to guide adaptive management of these habitats to benefit giant garter snakes.

We will conduct our studies in areas of known giant garter snake populations near the Colusa Basin Drain (Ridgecut Property) in Yolo County and at Gilsizer Slough in Sutter County. We will also study fallowed rice lands as identified by the California Waterfowl Association in the Richvale Irrigation District and Western Canal Water District of Butte County. Our approach will have two major components. We will mark individuals for long-term assessment of population viability in the project areas through mark and recapture population estimates. Mark and recapture work can be easily replicated for future evaluation. We will also radio-mark selected individual snakes to determine habitat use and specific responses to fallowing and habitat management. We will compare year-to-year movement patterns for individual snakes and evaluate potential effects of fallowing on snake survival, movements and habitat use. We will also use these approaches to assess snake use in wetland restoration sites and response to habitat management. In addition to publication of our results we will host a workshop to educate stakeholders about the results of this work and its implications for wildlife friendly farming practices. We will also establish a

web page to provide information about the project and about giant garter snakes and their life history and habitat requirements.

# **EVALUATION OF GIANT GARTER SNAKE RESPONSE TO CALFED'S ENVIRONMENTAL WATER ACCOUNT PROGRAM: ADAPTIVE MANAGEMENT FOR WILDLIFE FRIENDLY FARMING**

## ***A. Project Description***

### **1. Problem**

Giant garter snakes (*Thamnophis gigas*) were once found in wetlands throughout the Central Valley from Butte County in the north to Buena Vista Lake in Kern County in the south (U.S. Fish and Wildlife Service, 1999). These snakes have been extirpated south of Fresno and populations are severely reduced in the remainder of the San Joaquin Valley (Hansen and Brode 1980, Hansen 1988, Wylie 1998). Giant garter snakes have adapted to rice agriculture as cultivated wetlands, and significant populations exist throughout the rice production region of the Sacramento Valley, living in irrigation ditches as well as emergent rice fields (Hansen 1988, Wylie et al. 1997, 2000 a, 2000 b, 2000 c, 2003, 2004). Although giant garter snakes were originally described from the San Joaquin Valley (Fitch 1940), San Joaquin populations are currently at remnant levels (Sloan 2004, Wylie 1998). As a result of habitat loss and fragmentation, declining populations, and continuing threats to remaining populations, giant garter snakes were listed as a federally threatened species on October 20, 1993 (U.S. Fish and Wildlife Service, 1993) after the State of California listed the snake as threatened in 1971. The Federal recovery priority number for the giant garter snake is 2C: full species, high degree of threat, high recovery potential. The draft recovery plan for giant garter snakes includes more complete surveys for distribution and abundance as well as habitat restoration to benefit giant garter snakes (U.S. Fish and Wildlife Service 1999).

Populations of giant garter snakes have been adversely affected by large-scale land use changes that altered or converted their original wetland habitat. New stresses for giant garter snakes would come from agricultural land use changes that would reduce rice agriculture. Such a stress may result from CalFed's environmental water account (EWA). The EWA was established under the CalFed Bay-Delta Program Record of Decision so that CalFed cooperating agencies could manage water flow through the Delta to protect at-risk fish of the Bay-Delta estuary. These actions would require the acquisition of alternate sources of water supply to make up for curtailed water diversions out of the Delta. Purchasing water from agricultural water users upstream from the Delta would fallow fields and reduce habitat available for giant garter snakes. Because of the potential negative effect of agricultural fallowing on remaining giant garter snake populations, the U.S. Fish and Wildlife Service issued a Programmatic Biological Opinion on the EWA in January 2004 that specified expectations of CalFed's Ecosystem Restoration Program (ERP) to address a conservation strategy for giant garter snakes.

The ERP conservation strategy for giant garter snakes as it is developed by CalFed mirrors the recovery plan for this species (USFWS 1999), and would include

selecting sites for monitoring snakes and for habitat restoration projects. Distributional and status surveys for giant garter snakes would be done with baseline conditions established for monitoring sites. Habitat restoration sites would be monitored and design features important for giant garter snakes would be used in habitat restoration projects and wildlife-friendly agricultural treatments. As habitat is restored and agricultural treatments are implemented, monitoring would be done to evaluate responses of giant garter snakes to changing habitat conditions.

The USGS has contributed to the information needs of the recovery plan for giant garter snakes by doing distributional surveys and estimating current population sizes (e.g., Wylie et al. 1997a, Wylie 1998, Wylie and Casazza 2000a, Wylie and Martin 2004b), evaluating habitat use and movements including use of rice fields and wetlands (e.g., Wylie et al. 1997b, Wylie and Casazza 2000a), evaluating a habitat restoration project in relation to management. (Wylie et al. 2000c, 2001, 2002, 2003), and assessing the genetic structure of giant garter snake populations (Paquin 2001, Paquin et al. in press). The USGS is working in cooperation with the US Army Corps of Engineers to assess potential effects of levee bank stabilization methods on giant garter snakes in the Colusa Basin Drain which has lead to the discovery of a substantial population of snakes in and around the Drain and the importance of the Drain as a movement corridor (Wylie and Martin 2003, 2004a). In 2006 the USGS will also be working in cooperation with the US Bureau of Reclamation to expand surveys for the current distribution of giant garter snakes in the San Joaquin Valley.

Our studies have not specifically addressed the potential effects of habitat fallowing on giant garter snakes and one aspect of the EWA would be the potential to fallow appreciable amounts of rice habitat the snakes use. To ameliorate the effects of rice fallowing on giant garter snakes the FWS recommends that permanent wetlands be created to replace lost rice habitat and that water be maintained in the irrigation supply and drainage ditches adjacent to fallow fields. The sufficiency of habitat restricted to these ditches has not been evaluated for maintaining snake populations until the rice is grown again.

## **2. Goals and Objectives**

We propose to evaluate the potential effects of rice field fallowing on giant garter snakes to meet this information need in establishing valid regulatory guidelines for the CalFed EWA program. In addition we propose to assess giant garter snake habitat use in selected habitat restoration projects using the techniques we developed at Colusa National Wildlife Refuge (Wylie et al., 2005) to so that these habitats can be adaptively managed in their agricultural setting.

### **Objectives:**

1. Evaluate potential effects of fallowing of agricultural habitat on giant garter snakes.
2. Monitor response of giant garter snakes to habitat restoration and identify critical habitat components in restoration design.

### **3. Conceptual Model**

USGS research has shown that giant garter snakes have adapted to habitat provided by rice agriculture and associated irrigation supply and drainage ditches. This adaptation has led to the dependence of viable populations of giant garter snakes on agricultural habitats. A program of systematic fallowing of rice field habitat may adversely affect the viability of giant garter snake populations in the Sacramento Valley. Giant garter snakes may respond in several possible ways to fallowing of rice field habitat. Snakes may disperse from the fallowed area seeking other habitat. Snakes may have the mobility to successfully relocate or they may experience increased mortality because they cannot find suitable habitat. Another scenario is that the snakes remain in the adjacent irrigation ditches (if they are kept supplied with water) if the ditch habitat is sufficient for life history demands. The potential management options are highly varied depending on specific responses of snakes to fallowing as we determine with this proposed study.

Wetlands created for giant garter snakes have the potential to provide all of the necessary habitat for local populations of snakes. Currently in most areas of the Sacramento Valley snakes rely on rice agriculture for summer habitat. Managed wetlands would provide habitat when rice was not available as habitat in spring and fall. The creation of these managed wetlands should result in reduced snake movements and reduced exposure to predators and other mortality factors. Carrying capacity of managed wetlands for giant garter snake production should be greater than rice agriculture alone because of the continuously available habitat. Mark and recapture population estimates should reflect increased numbers of snakes in managed wetlands. Telemetry should identify key habitat features to guide adaptive management decisions in manipulating the wetlands.

### **4. Approach and Scope of Work**

Task 1:

Project management will be overseen by USGS personnel from the Western Ecological Research Center.

Task 2:

Field studies will be conducted by USGS personnel and located in the Sacramento Valley Region (Figure 1). Results of these studies should be broadly applicable to other areas of the Sacramento Valley.

Objective 1: We will select three sites that currently support populations of giant garter snakes in rice lands that could be fallowed. Sites would include lands owned and managed by Wildlands, Inc. near Dunnigan in Yolo County (Ridgecut Property) and at Gilsizer Slough in Sutter County. We will also select among sites identified by the California Waterfowl Association in the Richvale Water District of Butte County as part of their rice fallowing/nesting cover study (also a proposal for this PSP). Potentially

other sites may be identified through enrollment in the Environmental Water Account Program. The USGS has studied giant garter snakes at Gilsizer Slough and in and around the Wildlands property near Dunnigan (Wylie et al. 1996, Wylie and Martin 2004), and has identified significant populations of giant garter snakes at these sites. Giant garter snakes have been documented (NDDDB) in the vicinity of the California Waterfowl Association project area.

In the first year of this study we will monitor snake movements under normal rice growing conditions. In the second year of the study the rice fields will be fallowed and we will evaluate snake movements in relation to these conditions. Our approach will have two major components. We will mark individuals for long-term assessment of population viability in the project areas through mark and recapture population estimates. Mark and recapture work can be easily replicated for future evaluation. We will also radio-mark selected individual snakes to determine habitat use and specific responses to fallowing. We will compare year-to-year movement patterns for individual snakes and evaluate potential effects of fallowing on snake survival, movements and habitat use.

Each year we will deploy 200 modified floating minnow traps (Casazza et al. 2000) at each site to capture snakes for the telemetry and to make a demographic assessment of the snake populations. We deploy 200 modified floating minnow traps at each site along irrigation ditch banks. Irrigation ditches are core habitat for giant garter snakes when rice fields and other habitats are not available. Habitat edges act as a natural drift fence and the traps tend to become naturally baited with tadpoles, small frogs, and small fish over time. Traps will be checked six out of seven days each week to minimize exposure of trapped snakes and to minimize the time for snakes to escape from the traps. We will mark captured giant garter snakes with passively induced transponder (PIT) tags and measure them according to our standard protocols from our previous work (Wylie et al. 1997, Wylie et al. 2000 a, 2000 b, 2000 c). In addition, we will measure habitat variables such as vegetative cover, prey items in traps, temperature of water, air and terrestrial substrates, and conductivity of water. When capture data is sufficient, we will estimate density of local snake populations using the program MARK (White 2004, Otis et al. 1978). Habitat variables will be analyzed using principal components, canonical, and other discriminant function analysis (Johnson and Wichern 1988). Size frequency distributions will be used to analyze population demography, including recruitment.

We will weigh snakes to the nearest gram, and measure snout-vent length and tail length to the nearest millimeter. Identification of giant garter snakes will be confirmed by counts of dorsal scales and counts and widths of labial scales according to the identification key in Rossman et al. (1996). Sex will be determined using sexing probes to detect the presence or absence of hemepenes in the cloaca. Individuals will be scanned for the presence of passively induced transponder (PIT) tags. We will inject PIT tags into the body cavity of unmarked individuals. We will use a 12-ga needle to insert the tag ventrally approximately 5 cm anterior to the cloaca. The injection site will be swabbed with alcohol and the needle and PIT tags will be sterilized with alcohol. The injection site will be sealed with cyanoacrylate glue after the PIT tag is in place. We will measure

and mark snakes in the field and return snakes to their point of capture within a few hours of capture. Snakes will be held in shade or in insulated containers until their release.

We will radio-mark up to ten snakes at each following study area using surgically implanted temperature-sensitive radio transmitters (SI-2T, Holohil, Ltd). These transmitters have a battery life of up to two years. Snakes will be tracked using portable receivers and hand-held directional antennas and will be relocated at least five days per week. Vegetation type and structure along with substrate type will be recorded at the telemetry location determined for each snake each day. Each location will be geo-referenced with GPS and entered into the GIS which we will develop for this project using ARC/GIS (ESRI, Redlands, CA). Movements and home range estimates will be made using spatial analysis tools in ARC/GIS.

We will compare snake population demographics, habitat use and movements of snakes, and survival estimates between the treatment years. We will use the program MARK (White 2004) to make estimates of population densities from our mark and recapture information. We will use analysis of variance methods to make statistical comparisons between the treatment and “control” situations (Johnson and Wichern 1988). We will also evaluate and compare use of irrigation ditches and rice fields using special analysis tools of ARC/GIS.

Objective 2: In addition to the following study we will evaluate giant garter snake populations and habitat use at two relatively new restorations sites at Gilsizer and Dunnigan and we will also evaluate a wetland site enrolled in the California Waterfowl Association wetland program. We will capture snakes for radio telemetry studies and evaluation of population demographics using the trapping methodology previously described. At each site we will radio-mark 10-15 snakes, depending on total snakes captured, and follow their daily movements as previously described. Radio telemetry data will be incorporated into a GIS database using ARC/GIS and home range estimates will be constructed for each individually marked giant garter snake (Worton 1989, 1995; Tufto et al. 1996). We will examine habitat preferences on a seasonal basis using compositional analysis (Aebischer et al. 1993) to test for habitat preference by snakes at each of the study sites, as well as testing for year and season differences when sample size allows. We will examine habitat preference for second and third-order selection as described by Johnson (1980). We will use a multivariate analysis of variance (MANOVA) (Johnson and Wichern 1988) to test whether a composition of use to availability log ratios was significantly different than zero ( $P < 0.05$ ), indicating a preference by snakes for certain habitat types.

#### Task 3:

We will also establish a web page to provide information about the project and about giant garter snakes and their life history and habitat requirements.



#### Task 4:

At the conclusion of the field studies the USGS will host a workshop with other interested agencies to disseminate research findings. This will include management recommendations for minimizing impacts of water transfers on giant garter snakes and discussion of important design features of wetland restoration projects to benefit giant garter snakes.

### 5. Performance Evaluation

Performance is primarily measured by research products (Table 1). Products include giant garter snake location data base, habitat maps, peer reviewed scientific articles, a web site, and a workshop to deliver the information to the stakeholders.

Table 1. Schedule of performance measures.

Dates:	Tasks:
October 2006-March 2007	Compile GIS coverages, select study sites, assemble and prepare field equipment
April-September 2007	Conduct giant garter snakes surveys
May-October 2007	Conduct telemetry and demographic studies of restored and fallowed habitat
November 2007-March 2008	Summarize, analyze and interpret data, continue telemetry studies, prepare progress report
April-September 2008	Conduct second field season of giant garter snake surveys
April-October 2008	Conduct second field season of telemetry and demographic studies of restored and fallowed habitat
November 2008-May 2009	Continue and conclude telemetry studies, data analysis and interpretation, preparation of final report
December 2009	Final Report

### 6. Feasibility

The principal investigators each have extensive field experience directly applicable to organizing and performing the work described in this proposal. We currently have an ESA recovery permit to work with giant garter snakes, including telemetry and implant procedures. We will obtain landowners permission that we do not already have to access lands we identify as desirable for this study.

## **7. Data Handling, Storage and Dissemination**

All data collected during this project will be entered into PDA's and electronically downloaded daily into an ACCESS data. Data analysis will be done using ARC/GIS and with SAS, Program Mark and other related software. These data will be entered into the National Biological Information Infrastructure of the USGS with the appropriate metadata descriptions. Data will also be entered into the NDDB and be made available in the new California Department of Fish and Game BIOS program.

## **8. Information Value**

Our project will provide detailed information on the response of giant garter snakes to habitat fallowing that will assist farmers and resource managers in developing appropriate guidelines for water sales and rice land fallowing that will minimize adverse impacts for giant garter snakes. Our additional work on new wetland restoration areas will also provide a detailed evaluation of habitat features favored by giant garter snakes to adaptively manage for these habitat features. Our findings should be widely applicable throughout the rice growing areas of the Sacramento Valley. We will share information from this project with appropriate state and federal wildlife and agricultural agencies through presentations, peer-reviewed publications, a workshop and a website.

## **9. Public Involvement and Outreach**

Our research will be shared with agricultural organizations such as the California Rice Commission, NRCS offices, and county resource conservation districts as well as other state and federal wildlife and agricultural agencies. We will host a workshop to discuss our findings with private and public stakeholders in issues relating to giant garter snakes. We will also establish a web site accessible to the public as an informational tool about the project, best agricultural management practices and the life history characteristics of giant garter snakes, including a variety of images of habitat and the different color patterns of the snakes.

## ***B. Applicability to CALFED Bay-Delta Program and ERP Goals, and Priorities for this Solicitation***

### **1. ERP Priorities**

This project will help meet CALFED's goal to assist farmers and wildlife managers in contributing to the recovery of the snake and will meet major requirements of the FWS Biological Opinion for the EWA. In this project we are directly addressing the study needs for giant garter snakes as listed in Attachment 3 of the CALFED Ecosystem Restoration Program, Draft Stage 1 Implementation Plan (CALFED Program). Giant garter snakes are identified as an "r" species that would benefit from achieving three habitat milestones and six stressor reductions in Attachment 1 of the CALFED Program. We would also be continuing and enhancing our work in the Sacramento River Basin which would benefit two habitat milestones and six stressor

reductions. Moreover, this project meets part of Objectives 2 and 3 of Goal 1 for endangered and at-risk species for giant garter snakes.

## **2. Relationship to Other Ecosystem Restoration Actions or Program Investments**

Information from this study will help guide decisions about fallowing rice fields and restoring wetlands in the Sacramento Valley to allow purchase of water for the EWA with minimal adverse impacts for giant garter snakes. This study would also help guide wetland and cropland management and conservation plans for State Wildlife Areas, National Wildlife Refuges, and other natural areas. Results of this study would also guide easement programs for federal and state wildlife and agricultural agencies.

## **3. Additional Information for Proposals Containing Land Acquisition**

This section is not applicable to the proposed work.

### ***C. Qualifications and Organization***

USGS personnel involved in the proposed project are well-qualified to conduct this research as detailed in the Personnel form. The USGS personnel have been conducting similar original research on giant garter snakes since 1995, and are very familiar with wetland and agricultural habitats in the Sacramento Valley and in working with private landowners to conduct research on private lands. The USGS will provide project management, infrastructure, equipment, supplies, and vehicles together with field expertise. The USGS has worked and will work closely with the U.S. Fish and Wildlife Service, Natural Resource Conservation Service, California Department of Fish and Game, NGO's, and county resource conservation districts in promoting wildlife friendly farming and land management for giant garter snakes.

### ***D. Cost***

#### **1. Budget**

Objectives 1 and 2 of Task 2 could be done separately. There is appreciable overlap in field work between the two objectives with considerable cost savings of doing both objectives at the same time. Each objective in Task 2 would cost about \$700,000 if done separately.

#### **2. Cost Share Matching Funds**

The USGS Western Ecological Research Center will contribute about \$90,000 worth of capture, marking, and radio tracking equipment including ATVs, boats, terrariums, electronic calipers, PIT tagging equipment, GPS units, PDA's, computer programs, and computers.

### 3. Long-term Funding Strategy

Depending on our results we may seek funding for additional studies that would follow from this work. We would seek such funding from a variety of sources, including the USGS, the U.S. Fish and Wildlife Service, the U.S. Bureau of Reclamation, the Natural Resource Conservation Service, the California Department of Fish and Game, and the California Department of Water Resources.

#### ***E. Compliance with Standard Terms and Conditions***

We agree with the standard terms and conditions.

#### ***F. Literature Cited***

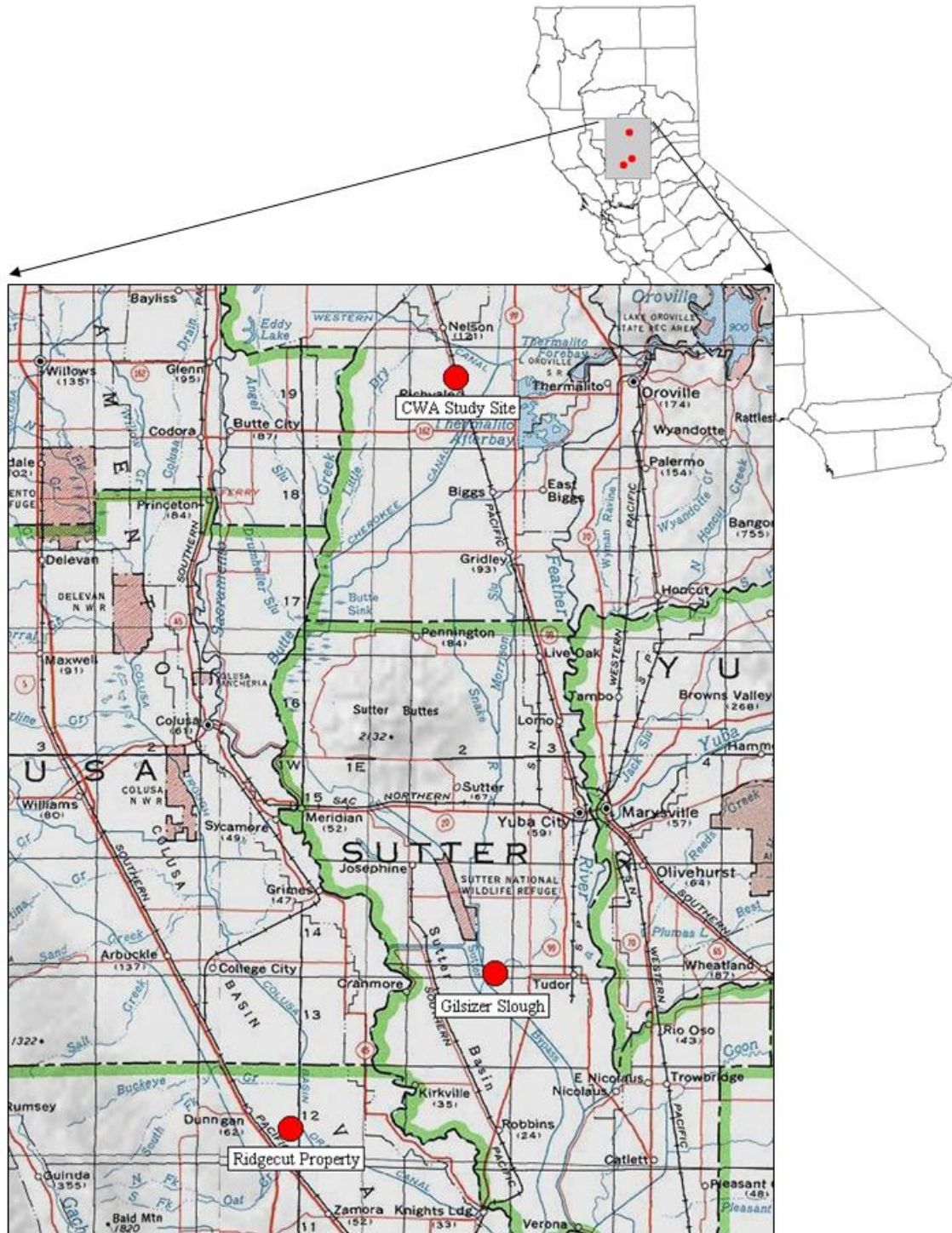
- Aebischer, N. J., P. A. Robertson, and R. E. Kenward. 1993. Compositional analysis of habitat use from radio-tracking data. *Ecology* 74:1313-1325.
- Casazza, M. L., G. D. Wylie, and C. J. Gregory. 2000. A funnel trap modification for surface collection of aquatic amphibians and reptiles. *Herpetological Review* 31(2), 91-92.
- Ducks Unlimited. 1998. Wetland distribution in the Sacramento Valley from remote sensing data. Ducks Unlimited, Rancho Cordova, CA.
- Fitch, H. S. 1940. A biogeographical study of the *ordinoides* Artenkreis of garter snakes (genus *Thamnophis*). University of California Publications in Zoology. 44:1-150.
- Hansen, G. E., and J. M. Brode. 1980. Status of the giant garter snake, *Thamnophis couchi gigas* (Fitch). California Department of Fish and Game. Inland Fisheries Endangered Species Program Special Publication Report No. 80-5. 14 pp.
- Hansen, G. E. 1988. Review of the status of the giant garter snake (*Thamnophis couchi gigas*) and its supporting habitat during 1986-1987. Final report for California Department of Fish and Game, Contract C-2060. 31 pp.
- Hansen, G. E. 1996a. Status of the giant garter snake (*Thamnophis gigas*) in the San Joaquin Valley in 1995. Final report for California Department of Fish and Game, Standard Agreement No. FG4052IF. 31 pp.
- Hansen, G. E. 1996b. GPS coordinates for locations of the giant garter snake (*Thamnophis gigas*) in the Sacramento Valley at the time of federal listing. Report for the National Biological Service. 10 pp.
- Johnson, D. H. 1980. The comparison of usage and availability measurements for evaluating resource preference. *Ecology* 61:65-71.

- Johnson, R. A., and D. W. Wichern. 1988. Applied multivariate statistical analysis. Prentice-Hall, Inc. Englewood Cliffs, NJ. 594pp.
- Otis, D. L., K. P. Burnham, G. C. White, and D. R. Anderson. 1978. Statistical inference from capture data on closed animal populations. *Wildl. Monogr.* 62: 1-135.
- Paquin, M. M. 2001. Population structure of the giant garter snake, *Thamnophis gigas*. Master of Arts thesis. San Francisco State University, San Francisco, CA. 27 pp.
- Paquin, M. M., G. D. Wylie, and E. J. Routman. In press. Population structure of the giant garter snake, *Thamnophis gigas*. *Conservation Genetics*.
- Sloan, J. 2004. Progress report for the San Joaquin Valley giant garter snake conservation project. California Department of Fish and Game, Los Banos, CA. 29 pp.
- Tufto, J., R. Andersen, and J. Linnell. 1996. Habitat use and ecological correlated of home range size in a small cervid: The roe deer. *Journal of Animal Ecology* 65:715-724.
- U. S. Fish and Wildlife Service. 1989. Wetlands of the California Central Valley – Status and trends: 1939 to the mid 1980's. U. S. Fish and Wildlife Service, National Wetland Inventory Division. Portland, OR. 29 pp.
- U. S. Fish and Wildlife Service. 1993. Endangered and threatened wildlife and plants; determination of threatened status for the giant garter snake. *Federal Register* 58: 54053-54066.
- U. S. Fish and Wildlife Service. 1999. Draft recovery plan for the giant garter snake (*Thamnophis gigas*). U. S. Fish and Wildlife Service, Portland, OR. 192 pp.
- White, G.C. 2004. Program MARK, version 4.0. Fort Collins, CO.
- Worton, B. J. 1989. Kernel methods for estimating the utilization distribution in home-range studies. *Ecology* 70:164-168.
- Worton, B. J. 1995. Using monte carlo simulation to evaluate kernel-based home range estimators. *Journal of Wildlife Management* 59:794-800.
- Wylie, G.D., M.L. Casazza, E. Burns, M. Paquin, J. Daugherty. 1997a. Surveys for giant garter snakes (*Thamnophis gigas*) at Stone Lakes National Wildlife Refuge. Final report. USGS-BRD, Western Ecological Research Center, Dixon Field Station, 8 pp.

- Wylie, G. D., M. L. Casazza, J. Daugherty. 1997b. 1996 progress report for the giant garter snake study. USGS-BRD, Western Ecological Research Center, Dixon Field Station, 18 pp.
- Wylie, G. D. 1998. Results of the 1998 survey for giant garter snakes in and around the Grasslands area of the San Joaquin Valley. USGS-BRD, Western Ecological Research Center, Dixon Field Station, 9 pp.
- Wylie, G. D., and M. L. Casazza. 2000 a. Investigations of giant garter snakes in the Natomas Basin: 1998-1999. Final report. USGS-BRD, Western Ecological Research Center, Dixon Field Station, 18 pp.
- Wylie, G. D., and M. L. Casazza. 2000 b. Investigations of giant garter snakes in the Natomas Basin: 2000 field season progress report. USGS-BRD, Western Ecological Research Center, Dixon Field Station, 13 pp.
- Wylie, G. D., M. L. Casazza, and N. M. Carpenter. 2000 c. Monitoring giant garter snakes at Colusa National Wildlife Refuge: 2000 progress report. USGS-BRD, Western Ecological Research Center, Dixon Field Station, 14 pp.
- Wylie, G. D., M. L. Casazza, and N. M. Carpenter. 2001. Monitoring giant garter snakes at Colusa National Wildlife Refuge: 2001 progress report. USGS-BRD, Western Ecological Research Center, Dixon Field Station, 12 pp.
- Wylie, G. D., M. L. Casazza, L. L. Martin, and N. M. Carpenter. 2002. Monitoring giant garter snakes at Colusa National Wildlife Refuge: 2002 progress report. USGS-BRD, Western Ecological Research Center, Dixon Field Station, 17 pp.
- Wylie, G. D., M. L. Casazza, L. L. Martin, and N. M. Carpenter. 2003. Monitoring giant garter snakes at Colusa National Wildlife Refuge: 2003 progress report. USGS-BRD, Western Ecological Research Center, Dixon Field Station, 18 pp.
- Wylie, G. D., M. L. Casazza, and L. L. Martin. 2003. Giant garter snake surveys in the Natomas Basin: 2000-2002. USGS-BRD, Western Ecological Research Center, Dixon Field Station, 21 pp.
- Wylie, G. D., M. L. Casazza, and L. L. Martin. 2004. Monitoring giant garter snakes in the Natomas Basin: 2003 results. USGS-BRD, Western Ecological Research Center, Dixon Field Station, 54 pp.
- Wylie, G.D., and L.L. Martin. 2003. Results of 2003 monitoring for giant garter snakes (*Thamnophis gigas*) for the bank protection project on the left bank of the Colusa Basin Drainage Canal in Reclamation District 108, Sacramento River Bank Protection Project, Phase II. USGS-BRD, WERC, Dixon Field Station, 14 pp.

- Wylie, G.D., and L.L. Martin. 2004a. Results of 2004 monitoring for giant garter snakes (*Thamnophis gigas*) for the bank protection project on the left bank of the Colusa Basin Drainage Canal in Reclamation District 108, Sacramento River Bank Protection Project, Phase II. USGS-BRD, WERC, Dixon Field Station, 33 pp.
- Wylie, G. D., and L. L. Martin. 2004b. Surveys for giant garter snakes on USFWS Partners for Fish and Wildlife project sites: final report. 31 pp.

Figure 1. Map of proposed study areas.





# Tasks And Deliverables

Task ID	Task Name	Start Month	End Month	Personnel Involved	Deliverables
1	Project Management	1	36	Wylie, Glenn Casazza, Michael	Semiannual and final reports. Quarterly invoices.
2	Field Studies	5	34	Wylie, Glenn Casazza, Michael	Data base, progress report, GIS coverages and data base, metadata, BIOS data sets.
3	Web Site	12	36	Wylie, Glenn Casazza, Michael	Web site with current, updated project activities.
4	Workshop	30	35	Wylie, Glenn Casazza, Michael	Informational workshop for public and private stakeholders regarding giant garter snakes and wildlife friendly farming practices.

## Total Project Budget Summary by Task and by Fiscal Year

Note: This budget summary <b>automatically links</b> to the costs and totals on the " <b>Budget Detail</b> " worksheet. <b>DO NOT CHANGE FORMULAS OR ENTER NUMBERS INTO ANY CELLS EXCEPT THE SHADED CELLS</b> for "Cost Share" and "Other Matching Funds"				
<b>BUDGET SUMMARY</b>	Total Amount for Year 1	Total Amount for Year 2	Total Amount for Year 3	Total Amount for All Years
Total Costs for Task One	\$ 19,197.57	\$ 19,851.04	\$ 20,541.23	\$ 59,589.84
Total Costs for Task Two	\$ 446,383.11	\$ 541,537.27	\$ 107,306.80	\$ 1,095,227.19
Total Costs for Task Three	\$ 5,796.99	\$ 6,029.60	\$ 6,275.23	\$ 18,101.82
Total Costs for Task Four	\$ -	\$ -	\$ 14,448.13	\$ 14,448.13
Total Costs for Task Five	\$ -	\$ -	\$ -	\$ -
Total Costs for Task Six	\$ -	\$ -	\$ -	\$ -
Total Costs for Task Seven	\$ -	\$ -	\$ -	\$ -
Total Costs for Task Eight	\$ -	\$ -	\$ -	\$ -
Total Costs for Task Nine	\$ -	\$ -	\$ -	\$ -
Total Costs for Task Ten	\$ -	\$ -	\$ -	\$ -
Total Costs for Task Eleven	\$ -	\$ -	\$ -	\$ -
Total Costs for Task Twelve	\$ -	\$ -	\$ -	\$ -
Total Costs for Task Thirteen	\$ -	\$ -	\$ -	\$ -
Total Costs for Task Fourteen	\$ -	\$ -	\$ -	\$ -
Total Costs for Task Fifteen	\$ -	\$ -	\$ -	\$ -
<b>Total Costs for Project Tasks</b>	\$ 471,377.68	\$ 567,417.91	\$ 148,571.39	\$ 1,187,366.97
1/Cost Share	\$ -	\$ -	\$ -	\$ -
2/ Other Matching Funds	\$ -	\$ -	\$ -	\$ -
1/ <i>Cost share funds</i> are specifically dedicated to your project and can include private and other State and Federal grants. Any funds listed in this line must be further described in the text of your proposal (see Chapter 3, Section D, of the PSP document)				
2/ <i>Other matching funds</i> include other funds invested consistent with your project in your project area for which the ERP grant applicant is not eligible. Any funds listed in this line must be further described in the text of your proposal (see Chapter 3, Section D, of the PSP document)				

1/ Indicate your rate, and change formula in column immediately to the right of this cell
2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.
3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet
4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")
5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

**Detailed Budget Breakdown by Task and by Fiscal Year**

BUDGET FOR TASK TWO	TOTAL AMOUNT TASK 2 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
<b>Personnel</b>										
Research Wildlife Biologist GS-13 Wylie	\$ 12,450.40	\$ 49.37	80	\$ 3,949.60	\$ 51.83	80	\$ 4,146.40	\$ 54.43	80	\$ 4,354.40
Senior Wildlife Biologist GS-12 Casazza	\$ 9,144.80	\$ 36.26	80	\$ 2,900.80	\$ 38.07	80	\$ 3,045.60	\$ 39.98	80	\$ 3,198.40
Biological Science Technicians GS-5 (6 for objective 1)	\$ 199,555.20	\$ 15.60	6240	\$ 97,344.00	\$ 16.38	6240	\$ 102,211.20			\$ -
Biological Science Technicians GS-5 (4 for objective 2)	\$ 133,036.80	\$ 15.60	4160	\$ 64,896.00	\$ 16.38	4160	\$ 68,140.80			\$ -
Biological Science Technician GS-7	\$ 106,579.20	\$ 19.32	1040	\$ 20,092.80	\$ 20.28	2080	\$ 42,182.40	\$ 21.30	2080	\$ 44,304.00
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
<b>Personnel Subtotal</b>	<b>\$ 460,766.40</b>			<b>\$ 189,183.20</b>			<b>\$ 219,726.40</b>			<b>\$ 51,856.80</b>
<sup>1/</sup> Benefits as percent of salary	20%			\$37,836.64			\$43,945.28			\$10,371.36
<b>Personnel Total (salary + benefits)</b>	<b>\$552,919.68</b>			<b>\$227,019.84</b>			<b>\$263,671.68</b>			<b>\$62,228.16</b>
<b>Other Costs</b>	<b>Total All Years</b>			<b>Total Year 1</b>			<b>Total Year 2</b>			<b>Total Year 3</b>
Operating Expenses: (space rental, gas, vehicles)	\$ 107,000.00			\$ 47,000.00			\$ 47,500.00			\$ 12,500.00
2/ Travel and Per Diem	\$ 3,000.00			\$ 1,000.00			\$ 1,000.00			\$ 1,000.00
supplies	\$ 30,000.00			\$ 30,000.00			\$ -			\$ -
4/ Sub-Contractor	\$ 60,000.00						\$ 60,000.00			\$ -
4/ Sub-Contractor	\$ 20,000.00			\$ 10,000.00			\$ 10,000.00			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
<b>Other Costs Subtotal</b>	<b>\$ 220,000.00</b>			<b>\$ 88,000.00</b>			<b>\$ 118,500.00</b>			<b>\$ 13,500.00</b>
<sup>5/</sup> Overhead Percentage (Applied to Personnel & Other Costs)	42%			\$ 131,363.27			\$ 159,365.59			\$ 31,578.64
<b>Total Costs for Task Two</b>	<b>\$ 1,095,227.19</b>			<b>\$ 446,383.11</b>			<b>\$ 541,537.27</b>			<b>\$ 107,306.80</b>

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet

4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")

5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

BUDGET FOR TASK THREE	TOTAL AMOUNT TASK 3 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
<b>Personnel</b>										
Research Wildlife Biologist GS-13 Wylie	\$ 3,112.60	\$ 49.37	20	\$ 987.40	\$ 51.83	20	\$ 1,036.60	\$ 54.43	20	\$ 1,088.60
Senior Wildlife Biologist GS-12 Casazza	\$ 4,572.40	\$ 36.26	40	\$ 1,450.40	\$ 38.07	40	\$ 1,522.80	\$ 39.98	40	\$ 1,599.20
	\$ -	\$ -		\$ -	\$ -		\$ -			\$ -

Applicant Name

[illegible]

**Detailed Budget Breakdown by Task and by Fiscal Year**

	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Personnel Subtotal</b>	<b>\$ 7,552.80</b>		<b>\$ -</b>		<b>\$ -</b>		<b>\$ 7,552.80</b>
<sup>1/</sup> Benefits as percent of salary	35%		\$0.00		\$0.00		\$2,643.48
<b>Personnel Total (salary + benefits)</b>	<b>\$10,196.28</b>		<b>\$0.00</b>		<b>\$0.00</b>		<b>\$10,196.28</b>
<b>Other Costs</b>	<b>Total All Years</b>		<b>Total Year 1</b>		<b>Total Year 2</b>		<b>Total Year 3</b>
Operating Expenses: (ex: seed, plant materials, irrigation supplies, software, office supplies, etc)	\$ -		\$ -		\$ -		\$ -
2/ Travel and Per Diem	\$ -		\$ -		\$ -		\$ -
3/ Equipment	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
<b>Other Costs Subtotal</b>	<b>\$ -</b>		<b>\$ -</b>		<b>\$ -</b>		<b>\$ -</b>
<sup>5/</sup> Overhead Percentage (Applied to Personnel & Other Costs)	42%		\$ -		\$ -		\$ 4,251.85
<b>Total Costs for Task Four</b>	<b>\$ 14,448.13</b>		<b>\$ -</b>		<b>\$ -</b>		<b>\$ 14,448.13</b>

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet

4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")

5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

BUDGET FOR TASK FIVE	TOTAL AMOUNT TASK 5 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
Personnel										
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
Personnel Subtotal	\$ -			\$ -			\$ -			\$ - -
										-
<sup>1/</sup> Benefits as percent of salary				\$0.00			\$0.00			\$0.00
Personnel Total (salary + benefits)	\$0.00			\$0.00			\$0.00			\$0.00

Proposal Number  
Proposal Name

### Detailed Budget Breakdown by Task and by Fiscal Year

Applicant Name

<b>Other Costs</b>	<b>Total All Years</b>			<b>Total Year 1</b>			<b>Total Year 2</b>			<b>Total Year 3</b>
Operating Expenses: (ex: seed, plant materials, irrigation supplies, software, office supplies, etc)	\$ -			\$ -			\$ -			\$ -
2/ Travel and Per Diem	\$ -			\$ -			\$ -			\$ -
3/ Equipment	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
<b>Other Costs Subtotal</b>	<b>\$ -</b>			<b>\$ -</b>			<b>\$ -</b>			<b>\$ -</b>
<sup>5/</sup> Overhead Percentage (Applied to Personnel & Other Costs)				\$ -			\$ -			\$ -
<b>Total Costs for Task Five</b>	<b>\$ -</b>			<b>\$ -</b>			<b>\$ -</b>			<b>\$ -</b>

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet

4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")

5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

BUDGET FOR TASK SIX	TOTAL AMOUNT TASK 6 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
Personnel										
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
Personnel Subtotal	\$ -			\$ -			\$ -			\$ - -
										-
<sup>1/</sup> Benefits as percent of salary				\$0.00			\$0.00			\$0.00
Personnel Total (salary + benefits)	\$0.00			\$0.00			\$0.00			\$0.00
Other Costs	Total All Years			Total Year 1			Total Year 2			Total Year 3
Operating Expenses: (ex: seed, plant materials, irrigation supplies, software, office supplies, etc) 2/ Travel and Per Diem 3/ Equipment 4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
	\$ -			\$ -			\$ -			\$ -
	\$ -			\$ -			\$ -			\$ -
	\$ -			\$ -			\$ -			\$ -

Proposal Number  
Proposal Name

**Detailed Budget Breakdown by Task and by Fiscal Year**

Applicant Name

4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
<b>Other Costs Subtotal</b>	\$ -			\$ -			\$ -			\$ -
5/Overhead Percentage (Applied to Personnel & Other Costs)				\$ -			\$ -			\$ -
<b>Total Costs for Task Six</b>	\$ -			\$ -			\$ -			\$ -

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet

4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")

5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

BUDGET FOR TASK SEVEN	TOTAL AMOUNT TASK 7 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
Personnel										
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
Personnel Subtotal	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
										-
1/ Benefits as percent of salary				\$0.00			\$0.00			\$0.00
Personnel Total (salary + benefits)	\$0.00			\$0.00			\$0.00			\$0.00
Other Costs	Total All Years			Total Year 1			Total Year 2			Total Year 3
Operating Expenses: (ex: seed, plant materials, irrigation supplies, software, office supplies, etc) 2/ Travel and Per Diem 3/ Equipment 4/ Sub-Contractor 4/ Sub-Contractor 4/ Sub-Contractor 4/ Sub-Contractor 4/ Sub-Contractor 4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
	\$ -			\$ -			\$ -			\$ -
	\$ -			\$ -			\$ -			\$ -
	\$ -			\$ -			\$ -			\$ -
	\$ -			\$ -			\$ -			\$ -
	\$ -			\$ -			\$ -			\$ -
	\$ -			\$ -			\$ -			\$ -
	\$ -			\$ -			\$ -			\$ -
	\$ -			\$ -			\$ -			\$ -
Other Costs Subtotal	\$ -			\$ -			\$ -			\$ -



Proposal Number  
Proposal Name

**Detailed Budget Breakdown by Task and by Fiscal Year**

Applicant Name

<sup>5/</sup> Overhead Percentage (Applied to Personnel & Other Costs)				\$ -			\$ -			\$ -
<b>Total Costs for Task Seven</b>	\$ -			\$ -			\$ -			\$ -

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet

4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")

5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

BUDGET FOR TASK EIGHT	TOTAL AMOUNT TASK 8 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
<i>Personnel</i>										
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
<b>Personnel Subtotal</b>	\$ -			\$ -			\$ -			\$ -
<sup>1/</sup> Benefits as percent of salary				\$0.00			\$0.00			\$0.00
<b>Personnel Total (salary + benefits)</b>	<b>\$0.00</b>			<b>\$0.00</b>			<b>\$0.00</b>			<b>\$0.00</b>
<i>Other Costs</i>	Total All Years			Total Year 1			Total Year 2			Total Year 3
Operating Expenses: (ex: seed, plant materials, irrigation supplies, software, office supplies, etc)	\$ -			\$ -			\$ -			\$ -
2/ Travel and Per Diem	\$ -			\$ -			\$ -			\$ -
3/ Equipment	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
<b>Other Costs Subtotal</b>	\$ -			\$ -			\$ -			\$ -
<sup>5/</sup> Overhead Percentage (Applied to Personnel & Other Costs)				\$ -			\$ -			\$ -
<b>Total Costs for Task Eight</b>	\$ -			\$ -			\$ -			\$ -

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

Applicant Name

[illegible]

Applicant Name

[illegible]

Proposal Number  
Proposal Name

**Detailed Budget Breakdown by Task and by Fiscal Year**

Applicant Name

	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Personnel Subtotal</b>	\$ -		\$ -		\$ -		\$ -
<sup>1/</sup> Benefits as percent of salary			\$0.00		\$0.00		\$0.00
<b>Personnel Total (salary + benefits)</b>	<b>\$0.00</b>		<b>\$0.00</b>		<b>\$0.00</b>		<b>\$0.00</b>
<b>Other Costs</b>	<b>Total All Years</b>		<b>Total Year 1</b>		<b>Total Year 2</b>		<b>Total Year 3</b>
Operating Expenses: (ex: seed, plant materials, irrigation supplies, software, office supplies, etc)	\$ -		\$ -		\$ -		\$ -
2/ Travel and Per Diem	\$ -		\$ -		\$ -		\$ -
3/ Equipment	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
4/ Sub-Contractor	\$ -		\$ -		\$ -		\$ -
<b>Other Costs Subtotal</b>	<b>\$ -</b>		<b>\$ -</b>		<b>\$ -</b>		<b>\$ -</b>
<sup>5/</sup> Overhead Percentage (Applied to Personnel & Other Costs)			\$ -		\$ -		\$ -
<b>Total Costs for Task Eleven</b>	<b>\$ -</b>		<b>\$ -</b>		<b>\$ -</b>		<b>\$ -</b>

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes.  
No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet

4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")

5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

BUDGET FOR TASK TWELVE	TOTAL AMOUNT TASK 12 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
Personnel										
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
Personnel Subtotal	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -			\$ -			\$ -			\$ -
<sup>1/</sup> Benefits as percent of salary				\$0.00			\$0.00			\$0.00

Proposal Number  
Proposal Name

### Detailed Budget Breakdown by Task and by Fiscal Year

Applicant Name

<b>Personnel Total (salary + benefits)</b>	<b>\$0.00</b>			<b>\$0.00</b>			<b>\$0.00</b>			<b>\$0.00</b>
<b>Other Costs</b>	<b>Total All Years</b>			<b>Total Year 1</b>			<b>Total Year 2</b>			<b>Total Year 3</b>
Operating Expenses: (ex: seed, plant materials, irrigation supplies, software, office supplies, etc)	\$ -			\$ -			\$ -			\$ -
2/ Travel and Per Diem	\$ -			\$ -			\$ -			\$ -
3/ Equipment	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
<b>Other Costs Subtotal</b>	<b>\$ -</b>			<b>\$ -</b>			<b>\$ -</b>			<b>\$ -</b>
<sup>5/</sup> Overhead Percentage (Applied to Personnel & Other Costs)				\$ -			\$ -			\$ -
<b>Total Costs for Task Twelve</b>	<b>\$ -</b>			<b>\$ -</b>			<b>\$ -</b>			<b>\$ -</b>

1/ Indicate your rate, and change formula in column immediately to the right of this cell

2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.

3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet

4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")

5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification

BUDGET FOR TASK THIRTEEN	TOTAL AMOUNT TASK 13 All Years	Year 1			Year 2			Year 3		
		Amount per hour	Number of Hours	Total Amount for Year 1	Amount per hour	Number of Hours	Total Amount for Year 2	Amount per hour	Number of Hours	Total Amount for Year 3
Personnel										
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -</		

Applicant Name

[illegible][illegible]

Proposal Number  
Proposal Name

### Detailed Budget Breakdown by Task and by Fiscal Year

Applicant Name

<b>Other Costs Subtotal</b>	\$ -			\$ -			\$ -			\$ -
<sup>5/</sup> Overhead Percentage (Applied to Personnel & Other Costs)				\$ -			\$ -			\$ -
<b>Total Costs for Task Fourteen</b>	\$ -			\$ -			\$ -			\$ -
1/ Indicate your rate, and change formula in column immediately to the right of this cell										
2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.										
3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet										
4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")										
5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification										
<b>BUDGET FOR TASK FIFTEEN</b>	<b>TOTAL AMOUNT TASK 15 All Years</b>	<b>Year 1</b>		<b>Year 2</b>			<b>Year 3</b>			
		<b>Amount per hour</b>	<b>Number of Hours</b>	<b>Total Amount for Year 1</b>	<b>Amount per hour</b>	<b>Number of Hours</b>	<b>Total Amount for Year 2</b>	<b>Amount per hour</b>	<b>Number of Hours</b>	<b>Total Amount for Year 3</b>
<i>Personnel</i>										
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
	\$ -	\$ -		\$ -	\$ -		\$ -	\$ -		\$ -
<b>Personnel Subtotal</b>	\$ -			\$ -			\$ -			\$ -
										-
<sup>1/</sup> Benefits as percent of salary				\$0.00			\$0.00			\$0.00
<b>Personnel Total (salary + benefits)</b>	<b>\$0.00</b>			<b>\$0.00</b>			<b>\$0.00</b>			<b>\$0.00</b>
<b>Other Costs</b>	<b>Total All Years</b>			<b>Total Year 1</b>			<b>Total Year 2</b>			<b>Total Year 3</b>
Operating Expenses: (ex: seed, plant materials, irrigation supplies, software, office supplies, etc)										
	\$ -			\$ -			\$ -			\$ -
2/ Travel and Per Diem	\$ -			\$ -			\$ -			\$ -
3/ Equipment	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
4/ Sub-Contractor	\$ -			\$ -			\$ -			\$ -
<b>Other Costs Subtotal</b>	\$ -			\$ -			\$ -			\$ -
<sup>5/</sup> Overhead Percentage (Applied to Personnel & Other Costs)				\$ -			\$ -			\$ -
<b>Total Costs for Task Fifteen</b>	\$ -			\$ -			\$ -			\$ -

Proposal Number  
Proposal Name

Detailed Budget Breakdown by Task and by Fiscal Year

Applicant Name

1/ Indicate your rate, and change formula in column immediately to the right of this cell
2/ Travel expenses and per diem must be at rates specified by the Department of Personnel Administration. The contractor is required to maintain travel receipts and records for auditing purposes. No travel out of the state of California shall be reimbursed unless prior written authorization is obtained from the State.
3/ Please provide a list and cost of major equipment (\$5,000 or more) to be purchased, and complete "Equipment Detail" Worksheet
4/ Please list each subcontractor and amounts (if subcontractor not selected yet, use function like "ditch construction subcontractor")
5/ Indicate rate in column immediately to the right of this cell; and provide a description of what expenses are covered by overhead. If overhead is > 15% must provide justification



# Environmental Compliance

## CEQA Compliance

Which type of CEQA documentation do you anticipate?

☒ none *Skip the remaining questions in this section.*

☐ negative declaration or mitigated negative declaration

☐ EIR

☐ categorical exemption *A categorical exemption may not be used for a project which may which may cause a substantial adverse change in the significance of a historical resource or result in damage to scenic resources within an officially designated state scenic highway.*

If you are using a categorical exemption, choose all of the applicable classes below.

☐ Class 1. Operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use beyond that existing at the time of the lead agency's determination. The types of "existing facilities" itemized above are not intended to be all-inclusive of the types of projects which might fall within Class 1. The key consideration is whether the project involves negligible or no expansion of an existing use.

☐ Class 2. Replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced.

☐ Class 3. Construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure. The numbers of structures described in this section are the maximum allowable on any legal parcel, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

☐ Class 4. Minor public or private alterations in the condition of land, water, and/or vegetation which do not involve removal of healthy, mature, scenic trees except for forestry or agricultural purposes, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

– Class 6. Basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies. These may be strictly for information gathering purposes, or as part of a study leading to an action which a public agency has not yet approved, adopted, or funded.

– Class 11. Construction, or placement of minor structures accessory to (appurtenant to) existing commercial, industrial, or institutional facilities, except where the project may impact on an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law by federal, state, or local agencies.

Identify the lead agency.

*Please write out all words in the agency title other than United States (Use the abbreviation "US".) and California (Use the abbreviation "CA".).*

Is the CEQA environmental impact assessment complete?

If the CEQA environmental impact assessment process is complete, provide the following information about the resulting document.

**Document Name**

**State Clearinghouse Number**

If the CEQA environmental impact assessment process is not complete, describe the plan for completing draft and/or final CEQA documents.

## NEPA Compliance

Which type of NEPA documentation do you anticipate?

☒ none *Skip the remaining questions in this section.*

– environmental assessment/FONSI

– EIS

– categorical exclusion

Identify the lead agency or agencies.

*Please write out all words in the agency title other than United States (Use the abbreviation*

"US".) and California (Use the abbreviation "CA").

If the NEPA environmental impact assessment process is complete, provide the name of the resulting document.

If the NEPA environmental impact assessment process is not complete, describe the plan for completing draft and/or final NEPA documents.

Successful applicants must tier their project's permitting from the CALFED Record of Decision and attachments providing programmatic guidance on complying with the state and federal endangered species acts, the Coastal Zone Management Act, and sections 404 and 401 of the Clean Water Act.

Please indicate what permits or other approvals may be required for the activities contained in your proposal and also which have already been obtained. Please check all that apply. If a permit is *not* required, leave both Required? and Obtained? check boxes blank.

<b>Local Permits And Approvals</b>	<b>Required?</b>	<b>Obtained?</b>	<b>Permit Number (If Applicable)</b>
<b>conditional Use Permit</b>	-	-	
<b>variance</b>	-	-	
<b>Subdivision Map Act</b>	-	-	
<b>grading Permit</b>	-	-	
<b>general Plan Amendment</b>	-	-	
<b>specific Plan Approval</b>	-	-	
<b>rezone</b>	-	-	
<b>Williamson Act Contract Cancellation</b>	-	-	
<b>other</b>	-	-	

<b>State Permits And Approvals</b>	<b>Required?</b>	<b>Obtained?</b>	<b>Permit Number (If Applicable)</b>
<b>scientific Collecting Permit</b>	-	-	
<b>CESA Compliance: 2081</b>	-	-	

<b>CESA Compliance: NCCP</b>	-	-	
<b>Lake Or Streambed Alteration Agreement</b>	-	-	
<b>CWA 401 Certification</b>	-	-	
<b>Bay Conservation And Development Commission Permit</b>	-	-	
<b>reclamation Board Approval</b>	-	-	
<b>Delta Protection Commission Notification</b>	-	-	
<b>state Lands Commission Lease Or Permit</b>	-	-	
<b>action Specific Implementation Plan</b>	-	-	
<b>SWRCB Water Transfer Approval</b>	-	-	
<b>other</b>	-	-	

<b>Federal Permits And Approvals</b>	<b>Required?</b>	<b>Obtained?</b>	<b>Permit Number (If Applicable)</b>
<b>ESA Compliance Section 7 Consultation</b>	-	-	
<b>ESA Compliance Section 10 Permit</b>	X	X	TE-020548-8
<b>Rivers And Harbors Act</b>	-	-	
<b>CWA 404</b>	-	-	
<b>other</b>	-	-	

<b>Permission To Access Property</b>	<b>Required?</b>	<b>Obtained?</b>	<b>Permit Number (If Applicable)</b>
<b>permission To Access City, County Or Other Local Agency Land Agency Name</b>	-	-	
<b>permission To Access State Land Agency Name</b>	-	-	
<b>permission To Access Federal Land Agency Name</b>	-	-	
<b>permission To Access Private Land Landowner Name</b>	X	X	
<b>Wildlands, Inc.</b>			

If you have comments about any of these questions, enter them here.

# Land Use

Does the project involve land acquisition, either in fee or through easements?

**X** No. *Skip to the next set of questions.*

– Yes. *Answer the following questions.*

How many acres will be acquired by fee?

How many acres will be acquired by easement?

Describe the entity or organization that will manage the property and project activities, including operation and maintenance.

Is there an existing plan describing how the land and water will be managed?

**X** No.

– Yes. *Cite the title and author or describe briefly.*

Will the applicant require access across to or through public or private property that the applicant does not own to accomplish the activities in the proposal?

– No. *Skip to the next set of questions.*

**X** Yes. *Answer the following question.*

Describe briefly the provisions made to secure this access.

**Permission has been granted by Wildlands, Inc. to access their property and conduct our work. Permission will be obtained through the California Waterfowl Association from participating landowners in their rice/cover crop rotation pilot program.**

Do the actions in the proposal involve physical changes in the current land use?

**X** No. *Skip to the next set of questions.*

– Yes. *Answer the following questions.*

Describe the current zoning, including the zoning designation and the principal permitted uses permitted in the zone.

Describe the general plan land use element designation, including the purpose and uses allowed in the designation.

Describe relevant provisions in other general plan elements affecting the site, if any.

Is the land mapped as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance under the California Department of Conservation's Farmland Mapping and Monitoring Program?

☒ No. *Skip to the next set of questions.*

☐ Yes. *Answer the following questions.*

Land Designation	Acres	Currently In Production?
Prime Farmland		–
Farmland Of Statewide Importance		–
Unique Farmland		–
Farmland Of Local Importance		–

Is the land affected by the project currently in an agricultural preserve established under the Williamson Act?

☒ No. *Skip to the next set of questions.*

☐ Yes. *Answer the following question.*

Is the land affected by the project currently under a Williamson Act contract?

☒ No. *Skip to the next set of questions.*

☐ Yes. *Answer the following question.*

Why is the land use proposed consistent with the contract's terms?

Describe any additional comments you have about the projects land use.