Summary Information

Friends of the Tuolumne, Incorporated

Tuolumne River Post Construction Habitat Evaluation

Amount sought: $353,790

Duration: 36 months

Lead investigator: Ms. Allison Boucher, Friends of the Tuolumne, Inc.

Short Description

This project will monitor two separate restoration projects managed by Friends of the Tuolumne: BOBCAT FLAT RIVERMILE 43 AND GRAYSON RIVER RANCH. This project will monitor the instream habitat enhancements to evaluate the effectiveness of the designs which aim to provide not only increased salmon spawning but also spawning and holding habitat for steelhead/trout.

Executive Summary

Executive Summary

This proposal is to monitor two separate restoration projects managed by Friends of the Tuolumne: BOBCAT FLAT RIVERMILE 43 AND GRAYSON RIVER RANCH.

We propose post construction monitoring of Bobcat Flat Rivermile 43, a CBDA and DWR/California Fish and Game funded instream and riparian restoration project on the Tuolumne River approximately 23 miles upstream of Modesto. Construction to be completed in 2005 includes removing aggregate from the floodplain thus lowering sections as much as four feet and placing the proper spawning gravel in the river channel to enhance salmonid habitat. Portions of the floodplain will be planted with native trees.

The objective of the project is to reestablish spawning and holding habitat for salmon and steelhead in an area that was severely damaged by the gold dredger. This is the first instream restoration on the Tuolumne River designed to enhance steelhead habitat. The riparian restoration objective is to lower the floodplain so that it will receive spring flood flows allowing some natural regeneration and to establish native plants. A high water scour channel will be built across the floodplain to enhance floodplain inundation.

We plan to monitor the instream habitat enhancements to evaluate the effectiveness of the designs which aim to provide not only increased salmon spawning but also spawning and holding habitat for steelhead/trout. The gravel is placed in riffles with deep holding water immediately below. The gravel is sized to attract both Chinook and trout spawning. Instream monitoring will complement other monitoring on the Tuolumne River, including monitoring at Bobcat Flat, by the Tuolumne River Technical Advisory Committee (TRTAC) and DFG such as juvenile fish seining, summer snorkeling, and fall run Chinook salmon redd surveys. We expect the outcome to be a stronger design “recipe” for riffle construction that will enhance both salmon and steelhead spawning.

Predator fish may be a limiting factor on the Tuolumne River. We propose to monitor the change in their use of the project site by analyzing where and when they are present and their feeding and spawning habits compared to pre−project status.

We plan to monitor the riparian restoration to determine if lowering the floodplain in this part of the river will encourage natural regeneration and provide for more successful planting.

Monitoring is designed to add to the base of knowledge for the TRTAC. We propose to use angling, cinema photography, GPS identification of specific sites, mapping, predator fish stomach contents analysis, and comparison with pre−project conditions. These tasks will help fill in the information gaps for adult steelhead/trout and predator fish in the spawning reach of the Tuolumne River.

The deliverables include detailed maps to demonstrate how the fish are using the new spawning and holding habitat, how the predator fish are responding to the new instream habitat, and reports describing the nature of the habitats and uses of the habitat compared to pre−project status. A report will evaluate the revegetation results and determine the effects of lowering the floodplain in this reach of the river.

This proposal also seeks funding to continue monitoring at GRAYSON RIVER RANCH RESTORATION at Rivermile 5 of the lower Tuolumne River. The objective at this site was to reestablish a riparian forest that was converted to agriculture many years ago and provide habitat for avian, terrestrial and aquatic species.

The restoration was physically completed in 2002. Active management ended in the fall of 2004. The CBDA contract has expired so we need additional funding to continue monitoring to evaluate biological responses to the restoration.

We propose to monitor the trend in abundance and diversity of avian species and mammals as indicators of restoration success, and to evaluate the plant palette mix of native trees and grass after the cessation of irrigation. Investigation into localized conditions that are

predictive of planting success will be done in the development of a predictive site quality index. Natural regeneration of native plants will be investigated to determine if natural processes are contributing to the restoration. Restoration also created a new floodplain backwater. We will monitor to determine if salmon, steelhead, and splittail use this habitat when water levels are appropriate.

Deliverables:

Vegetation monitoring will produce GIS mapping of plant inventories, survival, natural regeneration, overlayed with a Site Quality Index accompanied by appropriate reports.

Wildlife components will provide data and reports to support biologic response to habitat improvements in terms of population trends and richness. Fishery study will generate data to document use of constructed floodplain backwaters by juvenal Chinook salmon, steelhead, and splittail. Reports will be generated and included in Tuolumne River reports for the Tuolumne River Technical Advisory Committee.

Bobcat Flat RM 43 and Grayson River Ranch both address several ERP and CVPIA goals – ERP Strategic Goal 1: At−Risk Species, “big R”. Goal 3: Harvestable Species. Goal 4: Riparian Habitats, and CVPIA Priority SJ3: Rearing and spawning habitat for Chinook salmon, steelhead, and splittail.

Tuolumne River Post Construction Habitat Evaluation

A. Project Description

This proposal is to monitor two separate restoration projects managed by Friends of the Tuolumne: BOBCAT FLAT RIVERMILE 43 and GRAYSON RIVER RANCH.

BOBCAT FLAT RIVERMILE 43 (See Grayson River Ranch pages 10 – 18

STEELHEAD AND SALMON INSTREAM RESTORATION AND FLOODPLAIN RECLAMATION

The Friends of the Tuolumne received a CBDA grant and Don Pedro Dam FERC Settlement Funds from the City and County of San Francisco to purchase and restore 300 acres on the Tuolumne River approximately 23 miles upstream from Modesto. The property was purchased and the funded restoration construction will be completed in the summer of 2005. In 2002 Turlock Irrigation District on behalf of the Technical Advisory Committee was funded for Rivermile 43 gravel augmentation.

The construction will harvest aggregate from the floodplain, sort and clean the aggregate, and place it in the river for fishery habitat. The design for the instream placement of the gravel is unique to the Tuolumne River; it is the first project incorporating steelhead and trout spawning and holding water integrated into the design to provide both steelhead and salmon spawning habitat.

The riffle designs include contours with velocity above and below the shallow salmon riffles to provide a variety of habitats. The shallow riffle ledges will be bracketed with pocket water for steelhead spawning and holding areas. A deep transportation corridor will be included to provide protection for fish movement up and downstream. Streamside vegetation will be preserved for rearing and holding habitat. The patches of gravel will be placed to provide maximum steelhead and salmon spawning and holding habitat.

The harvesting of the aggregate will lower the floodplain by approximately four feet on about 9 acres. The reclamation design is intended to encourage natural regeneration of native trees and forbs. A high water scour channel across the same area will reduce the instream pressures during large flood events to better protect the constructed riffles from being washed out.

1. Problem, Goals, and Objectives: Steelhead and salmon spawning habitat in the Tuolumne River is insufficient. Although some good spawning habitat remains upstream at La Grange, very little remains in the dredger reach (Habitat Restoration Plan for the Lower Tuolumne River Corridor prepared for the

Tuolumne River Technical Advisory Committee, January 2001). This is the first instream design to implement steelhead, as well as salmon, spawning needs. Bobcat Flat is located within the reach of viable trout water. Bobcat Flat has the potential to significantly increase usable spawning habitat and increase the abundance of Chinook salmon spawning within its 1.6 miles of instream habitat (Habitat Restoration Plan for the Lower Tuolumne River Corridor).

Monitoring will provide guidance for future gravel augmentation projects on the Tuolumne and Merced Rivers in order to maximize both salmon and steelhead/trout spawning and holding habitat. The riffle designs are adapted from successful designs on the Stanislaus River that provide steelhead and salmon spawning on each riffle. The successful Stanislaus River gravel augmentation projects are used as a template. The monitoring of Bobcat Flat Rivermile 43 will help future Tuolumne River projects adapt for trout and salmon at the time of design.

Problem, Goals, and Objectives re predatory fish: The abundance of predatory fish in the Lower Tuolumne River may be a limiting factor for salmonid survival (FERC Settlement Agreement, Habitat Restoration Plan for the Lower Tuolumne River Corridor). Large backwater areas are ideal for predatory fish to hold and procreate. Bobcat Rivermile 43 has large numbers of bass, a known predator fish, and several areas documented as bass habitat.

Problem, Goals, and Objectives re vegetation: The dredger tailings were removed during the 1970's to build New Don Pedro Dam. The floodplain was left level, compacted, and covered with large aggregate. The new dam effectively limits spring flooding. Under these conditions natural regeneration of native trees and forbs has been minimal. The 9 acres in the funded restoration is covered with Star Thistle, an invasive weed.

The reclamation is designed to lower the floodplain allowing more frequent spring flooding in an effort to encourage natural regeneration of native trees and forbs. Because the floodplain will be lower to the water table, trees should be more successful in establishing a riparian forest. Once a riparian forest is established on this open and nearly barren land, the shade it provides will encourage native forbs. Planting of trees and forbs will test the hypotheses that (a) lowering the floodplain will encourage natural regeneration and (b) planted trees will be more easily established because the water table will be closer to the root zone. The construction also uses the aggregate for the instream riffle construction thus providing a double benefit.

2. Justification: Steelhead returning to spawn have few usable riffles. Gravel augmentation providing additional square yards for spawning can be designed to provide both salmon and steelhead spawning habitat, steelhead holding water, and transportation corridors for trout/steelhead.

Most areas actively used by steelhead/trout for spawning are on the downstream edge of the riffle and provide holding water that is at least four feet deep immediately downstream of the riffle. Although the recent gravel augmentation projects on the Tuolumne have been able to increase the square yards used by spawning salmon, they have not enhanced steelhead/trout habitat and may, in fact, have diminished useable trout habitat. The designs built at Bobcat Flat Rivermile 43 have incorporated steelhead/trout needs based on empirical observation upstream in the La Grange area on the Tuolumne River and on the Stanislaus River where adult steelhead/head trout have been recorded during spawning season. Building the Rivermile 43 instream restoration project is expected to provide additional useable square yards in the Tuolumne River for both steelhead/trout and salmon.

The Coarse Sediment Management Plan for the Lower Tuolumne River funded by the USFWS Anadromous Fish Restoration Program and administrated by Turlock Irrigation District includes mapping of general trout habitat and recommends monitoring of trout habitat both pre and post-project.

Steelhead/trout need spawning gravel of a smaller size than do Chinook salmon. Steelhead/trout also prefer riffles with higher velocity and/or surface turbulence providing cover. Steelhead/trout also need deeper holding water in the immediate vicinity of their spawning redds. All these attributes have been designed into Rivermile 43 construction.

Based on the monitoring results, the velocity, depth, gravel size, and length of riffles can be adjusted to improve future gravel projects on both the Tuolumne River and the Merced River. Velocity and linear length of the spawning riffles, depth and linear length of the holding water, and gravel size will be studied and compared to where and how the fish use the constructed project spawning riffles/pools. The exact design features can be fine tuned for the next instream restoration, particularly at Bobcat Flat since the next Bobcat Flat restoration is expected to be immediately adjacent to Rivermile 43.

Bobcat Flat has gravel available for instream restoration and will analyze the results of this project before implementing additional gravel infusion projects. We will also be certain that our results are fully shared with the Technical Advisory Committee as they begin implementation of the Coarse Sediment Plan for the Lower Tuolumne River gravel infusion projects. Steelhead/trout and salmon use patterns will be documented and analyzed in order to maximize available instream habitat for adult steelhead/trout, spawning salmon, and juvenile salmonid.

Justification re predatory fish: The construction of salmonid spawning, holding, and rearing habitat should reduce the available bass habitat. Post-construction monitoring will document any change in bass habitat and provide information for construction in areas that also have a predatory fish concern.

Bobcat Flat Rivermile 43 is an excellent choice of locations for this study because it is downstream toward the lower end of beneficial trout habitat and harbors large numbers of bass in the warmer backwaters.

The oversized cobble that will not be used to build the spawning riffles will be placed in some of the large, slow backwaters to reduce bass habitat as well as reduce the width of the stream and increase the velocity.

Justification re vegetation: Reestablishing a riparian forest in the dredger tailings section of the Lower Tuolumne River has been problematic due to the poor soil. By removing the large aggregate from the floodplain and using it for spawning riffle construction or other instream restoration, the soil will be improved enough to provide an adequate growing medium. The planting will leave some part of the 9 acres unplanted to test whether or not natural regeneration can occur with improved soil composition and a closer water table.

3. Previously Funded Monitoring: The report "Adult O. *mykiss* Habitat in the Lower Tuolumne River" was included in the Coarse Sediment Management Plan for the Lower Tuolumne River funded by USFWS Anadromous Fish Restoration Program and administrated by Turlock Irrigation District. The purpose for the report was to analyze successful steelhead/trout habitat on the Tuolumne River. Those elements have been designed into this construction project.

The Tuolumne River Technical Advisory Committee has prepared a three year monitoring proposal that will include seining for juvenile fish in the Lower Tuolumne River, including post-project Rivermile 43. The seining report will be incorporated into a comprehensive Bobcat Flat Rivermile 43 report.

California Department of Fish and Game has conducted salmon redd surveys for many years that include Rivermile 43. In addition, a pre-project salmon redd survey for Rivermile 43 is currently being implemented by McBain and Trush under funding by Department of Water Resources. DWR has funded $300,000 of the restoration for Rivermile 43 gravel augmentation including the pre-project redd survey and physical processes monitoring such as pebble counts, permeability, and facies mapping. The pre-project baseline monitoring reports will be included in a comprehensive analysis of the post-project results of restoration and reclamation at Rivermile 43.

Previously Funded Monitoring re predatory fish: Baseline predatory fish populations, their habitat use, feeding habits, and species will be completed before the instream construction begins. The baseline monitoring is funded by the original CBDA grant.

Previously Funded Monitoring re vegetation: Baseline vegetation monitoring has been completed with an inventory and photos (both aerial and landscape). The baseline vegetation monitoring has been funded by the original CBDA grant.

4. Approach as Scope of Work:

Adult Steelhead/trout: Trout habitat will be monitored using angling, cinema photography, and mapping GPS locations. Because other monitoring programs (McBain and Trush for the Technical Advisory Committee and Turlock Irrigation District) will monitor fish using seining and the physical processes such as pebble counts, permeability, and as built velocity, slope, etc., our program will focus on adult steelhead/trout. The construction at Rivermile 43 will be monitored by Dennis Hood with support from a local guide each year from January through June. The guide is capable of catching the elusive returning adult steelhead and native steelhead/trout. Previous angling efforts by other agencies have been unable to hook these large and difficult-to-catch fish. The guide was able to hook and land steelhead/trout weighing between 2 and 12 pounds for the California Department of Fish and Game DNA sampling in the Spring of 2004. Documentation of fish habitat usage will be mapped using GPS and cinema photography.

The deliverables will include a detailed map of the Rivermile 43 construction area for each of the three years, written and photo descriptions of the nature of habitat being used by steelhead/trout, and calculations of increased square yardage of use. Dennis Hood will prepare the reports and analysis comparing the results to the pre-project baseline monitoring and prior year monitoring results. We expect to be able to draw conclusions about the impact of the riffle designs on both Chinook salmon and steelhead/trout usage of Rivermile 43.

Because these riffles will be the first on the Tuolumne River designed to provide both Chinook salmon and steelhead spawning, holding, and rearing habitat, the analysis of how the post-project riffles are used will be valuable to the next designs prepared for both the Tuolumne and Merced Rivers. The hypothesis is that these riffle designs will increase use by both species for spawning, as well as provide holding water and a transportation corridor for trout movement up and downstream. We will also include in our reports the results of the juvenile seining at Rivermile 43 and evaluate how the post-construction affects rearing habitat usage.

Approach and Scope of Work re predator fish: Predator fish use of Rivermile 43 will be studied using angling, cinema photography, GPS location mapping, and stomach contents sampling. Currently predator fish use this part of the Tuolumne River for feeding and spawning. Our studies will compare the different species' use of the area each of the three years May through October and compare the approximate abundance and type and location of use to the pre-project monitoring report and to the prior years' reports. The goal is to establish the locations and water type used by predator fish and the impact salmonid restoration projects may have on predator fish.

Because other monitoring projects (McBain and Trush for the Technical Advisory Committee and Turlock Irrigation District) propose to study juvenile fish using seining and adult predator fish in other sections of the river using the same guide, our project will focus on adult predator fish specifically and in detail at Rivermile 43. Our results will be folded into McBain and Trush's reports to compile a river-wide report on adult predator fish.

Our monitoring results will be folded into a comprehensive report for Rivermile 43 detailing how predator fish use the habitat designed to enhance salmonids. Patches 4 and 5 of the gravel augmentation plan will use the oversize cobble to partially fill in backwater areas in an effort to reduce predator fish abundance as well as increase flow velocity. This angling and cinema photography will be intense so that an analysis can be prepared to recommend methods of reducing predator fish abundance throughout the entire 52 miles of the Lower Tuolumne River.

The deliverables will include a detailed map of the Rivermile 43 construction area for each of the three years, written and photo descriptions of the nature of habitat being used by predator fish, and calculations of decreased square yardage of use. Dennis Hood will prepare the reports and analysis comparing the results to the pre-project baseline monitoring and prior year monitoring results. We expect to draw conclusions about the impacts on predator fish abundance and habitat usage as affected by the gravel augmentation as designed and implemented.

The hypothesis is that these riffle designs will increase use by both salmon and steelhead/trout and reduce predator abundance by reducing predator spawning and feeding habitat. We will also include in our reports the results of the juvenile seining at Rivermile 43 and evaluate how the post-construction affects the abundance of juvenile predator fish.

Approach and Scope of Work re Vegetation: Monitoring the floodplain reclamation and revegetation will document how the vegetation was planted, what plant species survived, increased size, the methods of maintenance, and the degree and locations in which natural recruitment occurred. The physical characteristics of the post-construction floodplain will be described and photographed and compared to the pre-project floodplain.

Monitoring will be done during May of the first year post-construction and again in late summer or early fall in each of the three contract years.

Because we will be lowering the floodplain by approximately four feet, we need to document what effect this has on plant survivability and recruitment. The water table will be closer and we expect trees and plants to grow more easily. We will place water monitoring wells (tubes) during construction that will enable us to track the water table throughout the contract years. Readings will be taken

throughout the seasons to track how the water table is affected by flows and how it relates to plant survival.

The deliverables will include written and photographic descriptions of the re-vegetation results with conclusions regarding how the reclamation construction, planting methods, and maintenance methods affected success of which species, both planted and naturally occurring.

5. Feasibility: These monitoring tasks are feasible. The project construction is scheduled to be completed during the summer of 2005 so the post-project monitoring can begin January 2006 with the return of adult steelhead to the river. The contractor will have the necessary collection permits from CDFG and scientific research permits from NOAH. The steelhead/trout monitoring is seasonal and should begin in January in order to cover the full season from January through June.

As described above, we are using angling, photo cinema photography, and GPS mapping because we are focused on adult fish. Other monitoring programs on the Tuolumne River such as seining and snorkeling will and have covered juvenile and smaller fish during the summer months. Only angling has been able to study the elusive adult steelhead/trout and native trout. Most steelhead/trout monitoring is done during cold months when snorkeling is not suggested. Angling has been able to document the presence and location of steelhead/trout in the range up to 12 pounds.

The Tuolumne River Technical Advisory Committee is cooperating with us and we will be folding the results of their monitoring for juvenile fish and physical processes into our final report. We will share with them the results of our monitoring because we are the only study of adult steelhead/trout and we hope to draw conclusions about riffle design suitability. Our goal is to be able to guide future riffle designs to accommodate both Chinook salmon and steelhead/trout together and maximize the resources. The results will be useful for future riffle designs on both the Tuolumne and Merced Rivers. Bobcat Flat was purchased by Friends of the Tuolumne with the original CBDA grant. Therefore, no special permission is needed to perform the monitoring.

The vegetation monitoring needs no special permits. We plan to share our results with the Technical Advisory Committee, California Department of Fish and Game, and other groups managing restoration projects on the Tuolumne and Merced Rivers. Many of these projects face the same challenges of cobble rich but soil poor floodplains. Our experiment with lowering the floodplain by using the cobble for instream work in an effort to maximize the resource will gain some knowledge on the advantages/disadvantages of this strategy. Our monitoring reports will summarize our results for others managing projects in the region.

6. Expected Outcomes and Products: Steelhead

Our reports will detail the successful or unsuccessful aspects of the riffle designs with respect to how steelhead/trout use the restored habitat. We will fold into our report the information from the McBain and Trush salmon redd surveys and juvenile seining surveys so that we can analyze and make recommendations for the next instream gravel restoration projects on the Tuolumne and Merced Rivers. We expect the report to show that both species are using the restoration site in greater numbers than pre-project and that the heterogeneity provides excellent habitat for adult and juvenile Chinook salmon and steelhead/trout.

Expected Outcomes and Products: Predatory Fish

Our final report will analyze how the restoration has impacted predatory fish use of the area. Part of the design includes predator fish habitat reduction by filling large backwater areas where they spawn and feed and increasing flow velocity. The report will compare the predator fish use of the area and their diet to the results of the pre-project site. We will quantify the impact in an effort to measure the effectiveness of reducing predator fish so that the next restoration projects on the Tuolumne and Merced Rivers can adapt our results to their designs and use the opportunity to both enhance salmonid habitat as well as reduce predator impacts on salmonids.

Expected Outcomes and Products: Vegetation

Our report is expected to reach conclusions regarding the success of planting and the likelihood of natural regeneration on a lowered floodplain in the dredger reach. Each project to date on the Tuolumne River has improved and adapted from previous projects by all the project managers. This project will add to the knowledge base for restoration projects in cobble areas with little or no soil.

7. Data Handling, Storage, and Dissemination

Our reports and the results will be shared with the Technical Advisory Committee, local and county agencies restoring riparian habitat, California Fish and Game for their work on the Merced River, and any and all interested parties. We will provide tours and presentations to all interested groups and agencies. We work closely with many of the local and county agencies and will share with them all the knowledge learned in this monitoring program. We will continue our work to disseminate Tuolumne River knowledge as we work with cooperating groups.

8. Public Involvement and Outreach

As members of the Tuolumne River Technical Advisory Committee, Ceres River Bluff Regional Park floodplain restoration committee, regular participants in

discussions about the Tuolumne River Regional Park floodplain restoration, project managers of two CALFED projects, a member of the Tuolumne River Coalition (local watershed group with 12 agencies/non-profits), and active members in our community, we will give tours, assist in planning, offer our reports, and be available for questions on a regular basis. Our reports will be available for others' use.

9. Work Schedule

Each segment of our monitoring proposal can stand alone. Each segment of our monitoring is implemented annually for the three years of the contract. Steelhead/trout monitoring is January through June each year. Predator fish monitoring is May through October each year. The vegetation monitoring is May the first year and October of each year.

Although each segment can stand alone, together they provide a comprehensive study of an exciting new design theory for the Tuolumne River gravel augmentation program. Combined with the Technical Advisory Committee monitoring for juveniles, Chinook salmon redds, snorkeling, and general predatory fish in other projects, we will have a complete picture of the impact (success) of the different design features built into Bobcat Flat Rivermile 43 instream restoration and floodplain reclamation.

Small, S. , Nur, N, Black A., Geupel, G. and D. Humple. 2000. Riparian Bird Populations of the Sacramento River System: Results form the 1993 – 1999 Field Season. PRBO unpublished report to The Nature Conservancy and The US Fish and Wildlife Service.

B. Applicability to CALFED Bay-Delta Program ERP Goals, the ERP Draft Stage 1 Implementation Plan, and CVPIA Priorities

Bobcat Flat Rivermile 43

1. ERP and CVPIA Priorities: Our proposal seeks to address fall run Chinook salmon and steelhead habitat needs. Our construction project is instream and riparian rehabilitation in the salmonid spawning reach of the Lower Tuolumne River. The riffle designs are unique because they aim to provide spawning areas for both Chinook salmon and steelhead/trout in an area decimated by gold dredging 50 years ago.

Limited spawning is documented each year; the restoration aims to significantly increase the amount of usable riffle area and provide holding water and a transportation corridor for steelhead. Our proposal goal is to analyze the effectiveness of the riffle and gravel augmentation designs and the effectiveness of lowering the floodplain by utilizing the gravel for instream restoration. The

success of natural recruitment and plantings on the floodplain will be monitored. The proposal also addresses the expected impacts on predatory fish in the immediate vicinity of the rehabilitated instream habitat.

Bobcat Flat RM 43 addresses several ERP and CVPIA goals – ERP Strategic Goal 1: At-Risk Species, "big R". Goal 3: Harvestable Species. Goal 4: Riparian Habitat, and CVPIA Priority SJ3: Rearing and spawning habitat for Chinook salmon, steelhead, and splittail.

2. Relationship to Other Ecosystem Restoration Actions, Monitoring Programs, or System-wide Ecosystem Benefits: Our proposal builds on both past and future monitoring of the Lower Tuolumne River. Past snorkeling, seining, and redd surveys results will be compiled with our results to develop a comprehensive analysis of the Bobcat Flat Rivermile 43 rehabilitation. Proposed monitoring by the TRTAC will also be combined with our results to further the comprehensive analysis of the hypothesis that Chinook salmon and steelhead/trout spawning can be effectively designed together.

The results of our monitoring for the instream restoration will be available for future gravel augmentation projects under the Coarse Sediment Management Plan for the Lower Tuolumne River, at Bobcat Flat, and on the Merced River. We are eager to share the knowledge of this project and its monitoring program. We work closely with the TRTAC and California Fish and Game on the Tuolumne River. We expect the report to be a vital link in the association between Chinook spawning gravel projects and steelhead/trout habitat needs.

3. Land Acquisition: Not applicable.

A. PROJECT DESCRIPTION

Grayson River Ranch Perpetual Conservation Easement and Restoration
FLOODPLAIN RESTORATION TO RETURN CONVERTED RIPARIAN AREA TO FUNCTIONAL CONDITION FOR AVIAN, MAMMAL, AND FISH SPECIES.

Friends of the Tuolumne and the East Stanislaus Resource Conservation District partnered to apply for funding to undertake the 140 acre Grayson River Ranch Perpetual Conservation Easement and Restoration Project. It is located on the Lower Tuolumne River at Rivermile five.

It was funded through the 1998 CBDA ERP and by the U.S. Fish and Wildlife, Anadromous Fish Restoration Program (AFRP), and the U.S Department of Agriculture, Natural Resources Conservation Service (NRCS).

The perpetual conservation easement was finalized during the spring of 2000 with funds provided by the AFRP and NRCS. Construction of the site began in

August of 2000 when CBDA funds became available. The project was completed in October 2004. Long term monitoring of biologic response remains.

1. Problem Goals and Objectives:
The riparian forest of the eastern section was cleared and converted to agricultural use sometime prior to 1939. The western section was subsequently cleared and converted later. Aerial photographs taken in 1939 document a richly vegetated habitat on the western section and a completely converted eastern section. As intensive agriculture and modern technologies improved, the site was protected from river flood waters. As a consequence, the rich wildlife habitat of this site was lost and river flood functions were greatly diminished. Wildlife habitat value for all species was reduced to near zero. Agricultural use of the lower Tuolumne River has similarly converted the great majority of historic riparian land. Habitat necessary for both migratory and resident aquatic, avian, and terrestrial species is in short supply (Habitat Restoration Plan for the Lower Tuolumne River Corridor, prepared for the Tuolumne River Technical Advisory Committee).

Goal and Objectives
Create a healthy riparian forest where none existed that addresses the habitat needs of target species including resident and migratory avian, aquatic, and terrestrial species including "Big R" species identified in the Multi-Species Conservation Strategy (CBDA 2000): Central Valley steelhead ESU, Central Valley fall-/late-fall Chinook salmon SU, Valley Elderberry longhorn beetle .

Restoration actions
Two 2000 foot long backwaters were excavated to create off-channel fish habitat. 75,000 yards of material were moved to create backwater habitat that will fill from the downstream end and drain back out as river levels recede. These waterways are engineered to begin filling at approximately 4,300 CFS and fill the entire length with flows of 4,600 CFS. These are common high flows on the Tuolumne river that have occurred in approximately 50% of the years in recent history. Unfortunately, since completion of the construction, no such flows have occurred.

Riparian planting: The site has been devoid of riparian habitat for at least 30 and 65 years. It was replanted in 2001 and 2003 with a mix of approximately 7000 native riparian trees and grass. Some large areas on the site were left unplanted with the expectation that natural recruitment would vegetate those areas over time. Irrigation was reduced during 2004 and terminated in the fall of 2004. Establishment is well under way. The trees are beginning to establish very well and the native grass has taken hold in places and are beginning to spread. Wildlife use of the site is accelerating.

Physical restoration is 100% complete. Evaluation of wildlife biologic response to the improvements and continued monitoring of the vegetation will complete the project.

2. Justification

As outlined above, the site was bare cropland prior to restoration. It had almost no wildlife value due to its lack of habitat. Our conceptual model assumes that lack of wildlife use on this site was attributable to its impoverished habitat, and that creation of new habitat would produce a substantial increase. Proximity to the San Joaquin Wildlife Preserve and other heavily used local habitats indicates that good habitat is used when it exists. Grayson River Ranch contains good soils for vegetation growth. The soil types however have proven to be highly variable within localized project areas. This variability has apparently manifested itself in diverse vegetative viability and vigor (Hart Restoration, Inc).

3. Previously Funded Monitoring

Monitoring was funded as part of the original grant. The CBDA Cooperative Agreement expired October 2004. It is not possible to extend that contract to complete the planned long-term monitoring.

Monitoring of the site began with baseline monitoring prior to construction. Discrete components of the monitoring plan include actions to evaluate the biological response to restoration of the site. Funding to continue project evaluation has expired. Continued long term monitoring as originally envisioned will not be possible without additional funds.

Four key areas were selected from the ecosystem components because they represent the project performance across all possible components due to the inter-related processes of habitat creation and wildlife use. Project performance was related to wildlife population changes on the site for avian, mammals, and aquatic species relative to those of pre-construction. Vegetation monitoring evaluated early stage processes of survival and growth.

Performance measures for the project were evaluated by field monitoring by consultants from three of the four disciplines (Aquatic monitoring has not been possible due to inadequate river flow conditions to accommodate study requirements).

Vegetation is developing on the site with some regional areas showing substantial variability in growth and viability. More investigation is needed to determine the causes of these differences.

Wildlife population changes and use are important components of our conceptual model. It has been postulated that small mammals would show an earlier response to the habitat than larger ones due to their less mobile habits. In the mammal population, that appears to be true.

Avian populations responded immediately. Migratory songbirds and upland game birds have greatly expanded and increase each season as the project matures.

Scheduled monitoring activities to continue evaluation of biologic response will need to be postponed or cancelled if no additional funding is located. Preliminary data collected to date will provide limited value without continued monitoring as the project matures.

4. Approach and Scope of Work:

Avian

Recent studies have demonstrated that the presence of a suite of riparian bird species, and in particular, the successful breeding of these species, provides a good indicator of riparian health, and good gauge of restoration success (Griggs and Small, 2000). Natural process restoration and establishment of limited meander will create vegetation conditions (increased early successional habitat, vegetation structure and volume, patch diversity) that enhance and restore declining migratory bird species (Small et al 2000). Further information regarding the value of riparian habitat to birds and their roles as indicators of habitat health, is provided in the Riparian Habitat Joint Venture's Riparian Bird Conservation Plan (2000).

Overview and Objectives

The project will monitor trends in the avifauna and vegetation of the Grayson River Ranch site as a result of restoration activities. Data collected on the occurrence and abundance of bird species will be correlated with vegetation variables and compared to nearby control sites, which include undisturbed and other restored plots. These data will provide useful information to gauge the success of restoration at the site and help guide future restoration projects to better benefit birds. Collaborative data will be collected concurrently at nearby sites on the San Joaquin River. Data will be integrated with similar efforts on the San Joaquin National Wildlife Refuge. Furthermore, data from the site will be included in a statewide database that maps the current distribution of birds in California. For more information on this effort, please see the Riparian Bird Conservation Plan (Riparian Habitat Joint Venture 2000).

Objectives of this study are:

To assess bird species richness and diversity.
To determine abundance and distribution of select species.
To assess changes in the composition and structure of the plant community.
To use information to assess the constraints, and likelihood of recolonization of the restored riparian habitat.
To integrate data collected at this site with other projects to develop more complete models for riparian restoration along the San Joaquin River and its tributaries.

Hypotheses

Hypothesis 1: Species richness and diversity of native riparian-associated birds increases after riparian areas are restored.

Hypothesis 2: The occurrence and abundance of certain riparian-associated species is linked to particular vegetation variables, specifically related to the health of the native plant community.

Aquatic

Floodplain habitat provides valuable refugia to Chinook salmon and steelhead. Conditions in such habitats provide shelter from flood waters and improved feeding and rearing habitat for improved survival and growth. The floodplain backwater will be seine netted during appropriate flows to capture juvenile Chinook salmon and steelhead utilizing the backwater refugia. The nearby in-channel site will be seined as well. Data of captured fish will be compared to establish size differences between the two habitats. Such backwater locations also provide suitable habitat for splittail production. They will be sampled for splittail larvae.

Objective

Evaluate Grayson River Ranch restoration project to determine possible benefits to the Tuolumne River fishery. Determine fish species composition, density, and condition factor of salmonids in restored floodplain habitats compared to similar habitats in the main river channel. Sample for presence of splittail larvae. These objectives have been unfulfilled since the construction was completed because the required high river flows have not occurred. In recent years the required flows have occurred in about 50% of the years.

Hypotheses

1) Salmonids will use restored floodplain habitat during high river flows.

2) Salmonids utilizing restored floodplain habitat are more robust than those that use the adjacent in-channel habitat.

3)Splittail are present in the lower Tuolumne River during high flows and will use restored floodplain habitat.

Terrestrial

Overview

Monitoring efforts will be focused on two of three segments of the mammalian community – shrews and most rodents, which can be detected and enumerated by live trapping, and fossorial gophers and moles, which can be detected and their numbers indexed by counting the piles of castings on belt transects; on

medium and large sized species whose presence can be detected by the use of tracking stations, remote cameras, and direct observation. Medium and large mammal detection thresholds for determining population changes in such mobile populations is problematic. Because small mammals have lower vagility and often are more community-specific in their habitat requirements than medium and large-sized species, they are more likely to change in species composition and number with early successional changes in the plant community than are larger species. Thus, the small-mammal species will receive strongest emphasis in trend analysis monitoring.

Objectives:
Monitor selected mammalian species to document changes in the mammalian community throughout the project's establishment and maturation.

Hypothesis:
Changes in mammal species composition and number is related to successional changes in the plant community.

Vegetation:

Overview:
Vegetation monitoring typically involves three different phases. Phase I implementation monitoring documents the number and kinds of plants installed, their initial health, and planting location. Phase II maintenance and establishment monitoring occurs during the first several years. It documents plant health and growth during the first critical several years.

Phase I is complete. Phase II requires one more session to complete.
Hypothesis 1) Vegetative restoration will successfully establish.

Phase III monitoring remains in its entirety. It will document the transition of the plantings from individual plants to stands of vegetation that have habitat value.

There has been some debate regarding the relative merit of planting native riparian plant species vs. natural recruitment and colonization. Portions of the project were not planted with the expectation that natural regeneration would occur. Since approximately 1/3 of the property has been set aside as open (not planted) areas, the project area is ideally positioned to test the hypotheses:
2) Horticultural techniques of planting is (or is not) a more reliable approach than the results of allowing for natural recruitment to develop riparian habitat.
3) Growth rates of plants at this former agricultural site exceed growth rates of plants from nearby "natural sites".
4) Relative success of the different tree species is dependant upon environmental conditions at the site.

Monitoring of the riparian habitat will consist of the following research components:

1)Survival of woody plants/habitat development. : a) 100% inventory of all plants to determine percent survival compared to original plantings; b) GPS determinations of these trees by species; and, c) using geo-rectified air photos of the 133 acre restoration site, a GIS study will map and to analyze the areal extent of habitat conditions (i.e., actively restored habitat, natural recruitment, invasive plant communities).
2)Site Quality Index Evaluation. Growth and development of established habitat will be compared to natural plant growth in nearby natural "idealized" habitat areas. Within Grayson Ranch, site quality physical differences will be subsequently analyzed. As soil quality differences are likely related to soil profile and moisture differences, soil trenches will be dug to assess differences in soil quality and moisture availability.
3) Natural Recruitment/natural regeneration. We will design a sampling scheme to detect whether native plants are colonizing the site under the present conditions.
4) Native Grass Plantings. 15 acres of the site was planted with native grass seed. To determine the success of these plantings, plots will be located at random locations along transects within these areas. Measurements of density, percent cover and frequency will be made, comparing the planted grass species with other native and exotic species.

Feasibility

This restoration site is complete and biological responses are now developing. Project restoration began in 1999 and is now mature enough to offer meaningful observation and conduct research on developing processes. Data is now readily available and can be ascertained through continuation of monitoring activities previously described.

Fishery monitoring is one component of the proposal with a level of uncertainty because it relies upon appropriate river flow conditions. Scheduling those investigations will opportunistic.
There are no environmental compliance checklist items that are relevant during this phase of the project.

The project is located on an easement purchased in 1998 from Grayson River Ranch, LLC. The landowner of Grayson River Ranch has agreed to allow access through and across his property. Attachment___

Interested parties to this project include the property owner, The Tuolumne River Technical Advisory Committee, The East Stanislaus Resource Conservation District, Yokuts chapter of the Sierra Club, The Stanislaus County Audubon Society, and representatives of State and Federal agencies. All listed parties are highly supportive of these described efforts and there is no opposition. This phase of the project has no third party impacts since it is solely investigational.

Expected Outcomes and Products

Each of the four components of the monitoring program at Grayson River Ranch will prepare reports each season monitoring is conducted and a final compilation report with study conclusions the final year. All reports will be forwarded to our partners on the Tuolumne River, including the Tuolumne river Technical Advisory Committee and others actively working on the Tuolumne River. We will use the opportunity to share our information with the several groups we actively meet and work with. The project is generating good data. We will make presentations to various forums to share our findings. Articles will be prepared for agency publications and web-sites.

Avian- Reports will be compiled with the San Joaquin Valley reports PRBO is generating for analysis region wide. Reports generated will expose population and habitat use trends in response to maturing restored habitat. Populations and species diversity are expected to increase and nesting populations are anticipated as the project matures. Bird populations have already shown substantial increases and were the first to respond substantially to the restoration.

Aquatic- Reports generated will document use of the constructed floodplain backwater habitat. The fishery consultant performing the study also performs similar work for Turlock Irrigation District. This study will be included with District reports. It will produce quantitative and qualitative assessment of Juvenile Chinook salmon and steelhead trout using the habitat as compared to those that remain in the nearby river channel.

Terrestrial- Reports generated will be prepared to document population changes in mammal species. Increases are positive indicators that restoration goals are being achieved. It is expected that small mammal populations will lead the way as indicators for habitat recovery due to their more stationary life histories.

Vegetation- It is expected that phase II will document restored vegetation survival and establishment. It is also expected that the experimental species in the planting mix may begin to show stress during the summer of 2005 and begin to experience die off now that irrigation was been terminated in the fall of 2004. The site quality index evaluation being conducted is a pilot study for further investigation and refinement. GIS mapping will be produced indicating planting locations and survival with overlays of natural regeneration and the Site Quality Index. It will generate further investigation and improved understanding of plant response to environmental circumstances

Data Handling, Storage, and Dissemination

See section 7 in the Bobcat Flat RM 43 section

Public Involvement and Outreach

See section 8 in the Bobcat Flat RM 43 section.

Work Schedule

The monitoring plan for this project is comprised of four discrete components. Each one is free standing and independent of the others.

As previously discussed, aquatic monitoring scheduling needs to be opportunistic to take advantage of river flow conditions that inundate the floodplain back-water areas. Study will be conducted any season conditions are appropriate.

Avian - May through June in contract years 1 and 3.
Terrestrial – August through September in contract years 1 and 3.
Vegetation – April through October in contract years 1 and 3.
Aquatic – Opportunistic in any year December through May.
Public outreach will be continuous as we interact with our river partners and provide them with updates.

B. Applicability to CALFED Bay-Delta Program ERP Goals, the ERP Draft Stage 1 Implementation Plan, and the CVPIA Priorities

1. ERP and CVPIA Priorities

This project addresses multiple Bay-Delta ERP Goals and CVPIA Priorities listed below in the San Joaquin Region management Zone. The project design and monitoring plan addresses concerns of two “big R” species, (steelhead and splittail) as part of the monitoring plan. Additionally, Tuolumne River hosts a population of naturally spawning fall run Chinook salmon. This project is a previously CBDA funded riparian restoration to restore biotic function. It is the first on the river and the most mature.

ERP Draft Stage 1 Implementation Plan: goals **1**. At risk species **3**. Harvestable Species and **4**. Riparian Habitat.

Ecosystem Restoration Program Priorities for the San Joaquin Region.
SJ-3 Improve rearing and spawning Habitat … for Chinook salmon and steelhead trout and splittail

CVPIA Priorities for the San Joaquin Region 3. Improve rearing and spawning habitat particularly for Chinook salmon, steelhead trout and splittail.

2. Relationship to other Ecosystem Restoration Actions, Monitoring Programs, or System-wide Ecosystem Benefits

There are several active restorations in progress over the length of the Tuolumne, Stanislaus and Merced Rivers. Restoration techniques, approaches, and observations have been widely shared. Grayson River Ranch is an early CBDA project on the Tuolumne River. It is four years ahead of the next comparable project on the river. It has lead the way and provided guidance and

instruction for implementation. The Endangered Species Recovery Program from California State, Stanislaus is one of our monitoring investigators. They will gain good information to add to their knowledge base and pass it on to other partners.

C. Qualifications

Allison Boucher, Co-project Manager
Occupation: Practicing CPA
Focused on habitat and issues and habitat of the Tuolumne since 1992. Has performed the roles of Co-Project Restoration Manager at Bobcat Flat (CBDA funded), Waterford Perc Ponds site, Grayson River Ranch (CBDA funded). Was 1995 FERC Settlement Agreement negotiator/signatory, member of the Tuolumne River Technical Advisory Committee, and the Tuolumne River Coalition, Treasurer, Friends of the Tuolumne, Inc.
Her financial skills will be useful during the project and her past experience in riparian and aquatic habitat make her well suited to surround herself with good people and guide the project through the process.

Dave Boucher, Co-project Manager
Occupation: Medical
Same as above except officer roles. Husband and wife team. President, Friends of the Tuolumne, Inc. Co-project Restoration Manager Stanislaus River gravel infusions 1997 and 1998. Past President and current Treasurer Stanislaus Fly Fishermen. Associate Director, East Stanislaus Resource Conservation District.

Dennis Hood, KDH Environmental Services
Fish and Wildlife Biologist
Mr. Hood has 16 years experience in his field in disciplines including fisheries and aquatic ecology, wildlife biology, and threatened and endangered species management. He has experience in fish and wildlife impact analysis and in developing, implementing, and monitoring of several fishery projects in the California central valley.

Doug Demko, PhD. S.P. Cramer and Associates, Inc.
Fish Biologist
Dr. Demko is has many years of experience on San Joaquin River Tributaries. He operates seining surveys on the Tuolumne River for the Dam operator and is responsible for data analysis, interpretation, and report preparation.

Dr. Jeff Hart, PhD., H.A.R.T. Restoration Team
Botanist and Plant Ecologist
Dr. Hart is well experienced the California Central Valley. He has performed restoration design work and performance monitoring on the Tuolumne River in the past for Friends of the Tuolumne at Grayson River Ranch and Bobcat Flat. He has also performed similar tasks for Turlock Irrigation District projects.

Laurissa Hamilton, Endangered Species Recovery Program
Wildlife Biologist
Ms. Hamilton is an experienced small mammal biologist with extensive experience monitoring small mammals on the San Joaquin River and its tributaries. She has led the mammal monitoring effort in the past at Grayson River Ranch.

Jeanne Hammond, PRBO
Avian Biologist
Ms Hammond is an experienced avian biologist with extensive experience monitoring bird populations of the California Central Valley. She devotes most of her investigations to local riparian habitats. She has led the avian monitoring in the past at Grayson River Ranch.

D. Cost sharing

Bobcat Flat Rivermile 43 Our proposal is linked with other monitoring by the Turlock Irrigation District and Tuolumne River Technical Advisory Committee. We will compile elements of their studies (salmon redds, juvenile seining, etc.) into a comprehensive report for Bobcat Flat Rivermile 43. We will share data from our studies with them for their reports. The California Rivers Restoration Fund (CRRF) is cost sharing on O. *mykiss* and predatory fish monitoring.

Grayson River Ranch Our monitoring is part of a comprehensive study of the San Joaquin River and its tributaries by both PRBO and the Endangered Species Recovery Program. Results from our studies is included in their comprehensive reports as well as distributed to groups and agencies working on the Tuolumne and Merced Rivers.

The fishery monitoring of the created floodplain backwaters will be included in the comprehensive reports by Cramer & Associates with their studies for the Turlock Irrigation District.

E. Compliance with Standard Terms and Conditions

We are willing and able to comply with the terms of standard ERP grant agreements.

G. Literature Cited

Habitat Restoration Plan for the Lower Tuolumne River Corridor prepared for The Tuolumne River Technical Advisory Committee, January 2001

Coarse Sediment Management Plan for the Lower Tuolumne River prepared the Tuolumne River Technical Advisory Committee, Turlock and Modesto

Irrigation Districts, USFWS Anadromous Fish Restoration Program, California Bay-Delta Authority, July 2004

Griggs, T. and Small, S. 2000. Riparian Vegetation White Paper for CALFED. Draft of 27 March 2000. 64 pages. Available from tgriggs@jps.net or small@prbo.org.

RHJV (Riparian Habitat Joint Venture). 2000. Version 1.0. The riparian bird conservation plan: a strategy for reversing the decline of riparian associated birds in California. California Partners in Flight. http://www.prbo.org/CPIF/Riparian/Riparian.html

Small, S. , Nur, N, Black A., Geupel, G. and D. Humple. 2000. Riparian Bird Populations of the Sacramento River System: Results form the 1993 – 1999 Field Season. PRBO unpublished report to The Nature Conservancy and the US Fish and Wildlife Service.

H. Nonprofit Verification

See attached scanned letter from IRS dated October 2000.

Tuolumne River Post Construction Habitat Evaluation

List of Attachments

Locator map

Bobcat Flat RM 43 restoration aerial planform

IRS 501(c)(3) status letter

Grayson River Ranch access permission

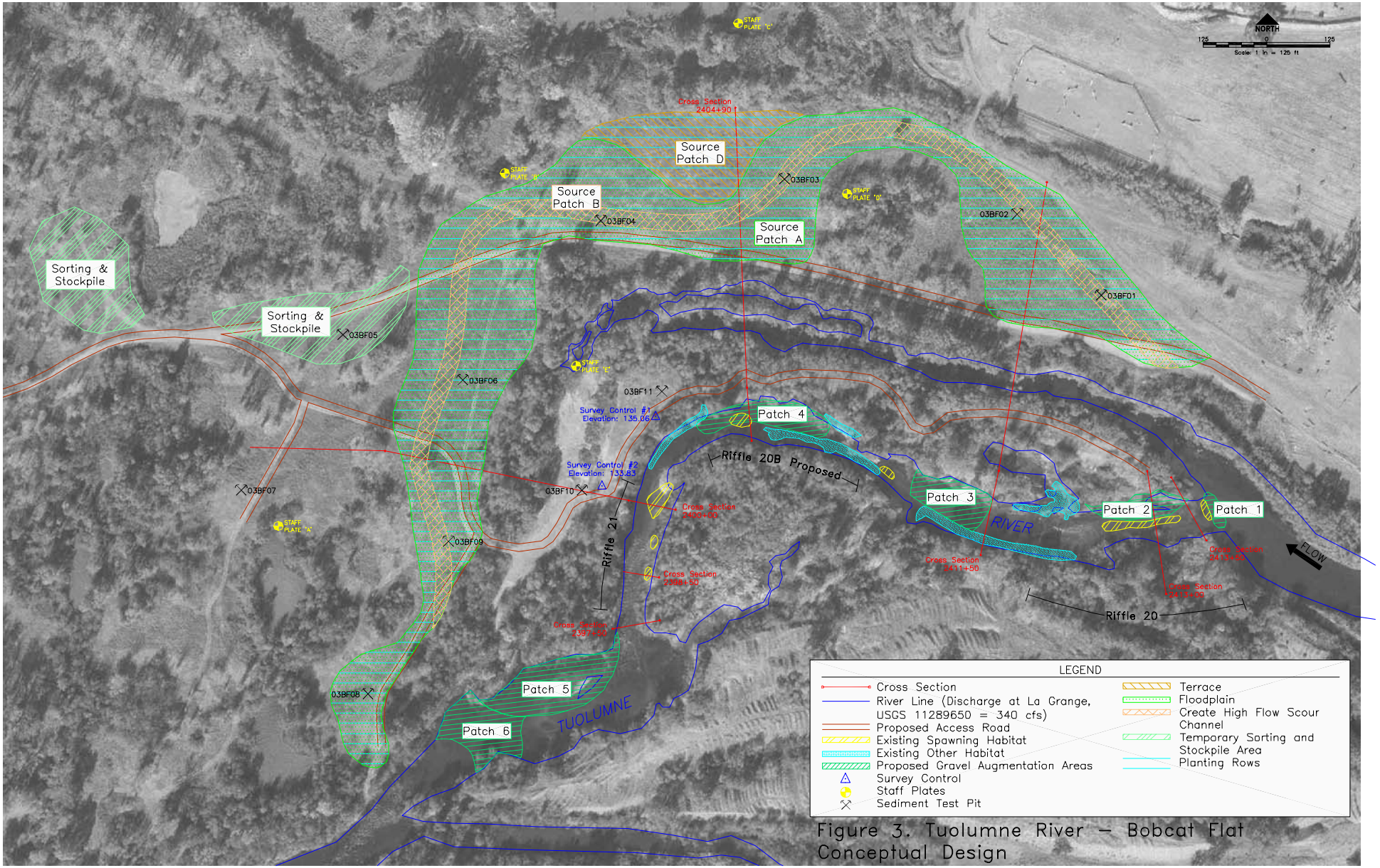
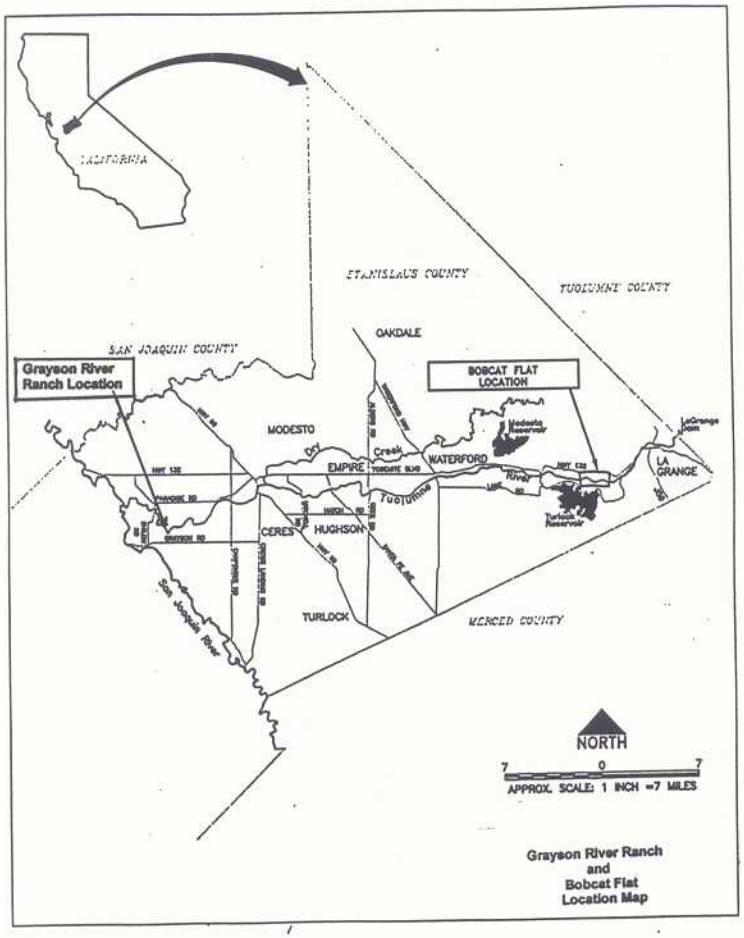


Figure 3. Tuolumne River – Bobcat Flat Conceptual Design



Grayson River Ranch
and
Bobcat Flat
Location Map

INTERNAL REVENUE SERVICE
P. O. BOX 2508
CINCINNATI, OH 45201

DEPARTMENT OF THE TREASURY

Date: OCT 05 2000

Employer Identification Number:
77-0404340
DLN:
17053267710010
Contact Person:
DAVID V SCIAN ID# 31369
Contact Telephone Number:
(877) 829-5500
Our Letter Dated:
October 1996
Addendum Applies:
No

FRIENDS OF THE TUOLUMNE
2412 HILO LANE
CERES, CA 95307

Dear Applicant:

This modifies our letter of the above date in which we stated that you would be treated as an organization that is not a private foundation until the expiration of your advance ruling period.

Your exempt status under section 501(a) of the Internal Revenue Code as an organization described in section 501(c)(3) is still in effect. Based on the information you submitted, we have determined that you are not a private foundation within the meaning of section 509(a) of the Code because you are an organization of the type described in section 509(a)(1) and 170(b)(1)(A)(vi).

Grantors and contributors may rely on this determination unless the Internal Revenue Service publishes notice to the contrary. However, if you lose your section 509(a)(1) status, a grantor or contributor may not rely on this determination if he or she was in part responsible for, or was aware of, the act or failure to act, or the substantial or material change on the part of the organization that resulted in your loss of such status, or if he or she acquired knowledge that the Internal Revenue Service had given notice that you would no longer be classified as a section 509(a)(1) organization.

You are required to make your annual information return, Form 990 or Form 990-EZ, available for public inspection for three years after the later of the due date of the return or the date the return is filed. You are also required to make available for public inspection your exemption application, any supporting documents, and your exemption letter. Copies of these documents are also required to be provided to any individual upon written or in person request without charge other than reasonable fees for copying and postage. You may fulfill this requirement by placing these documents on the Internet. Penalties may be imposed for failure to comply with these requirements. Additional information is available in Publication 557, Tax-Exempt Status for Your Organization, or you may call our toll free number shown above.

If we have indicated in the heading of this letter that an addendum applies, the addendum enclosed is an integral part of this letter.

FRIENDS OF THE TUOLUMNE

Because this letter could help resolve any questions about your private foundation status, please keep it in your permanent records.

If you have any questions, please contact the person whose name and telephone number are shown above.

Sincerely yours,

Steven T. Miller

Steven T. Miller
Director, Exempt Organizations

Grayson River Ranch, LLC

5518 Stoddard Road
Modesto, CA 95356-9001
209 545 9702

Grayson River Ranch Access Permission

November 16, 2004

CALFED Bay-Delta Authority
650 Capitol Mall, 5th Floor
Sacramento, CA 95814

Re: Access to Grayson River Ranch

Dear CALFED Bay-Delta Authority:

I have been advised by Dave Boucher of Friends of the Tuolumne that they will be responding to your current monitoring PSP. It is my understanding that for the purpose of conducting the proposed studies, they require my formal permission to travel on my property.

I authorize access to and across my property by them and their consultants for the purpose of monitoring site conditions.

Sincerely,

Paul Van Konynenburg
Managing Member
Grayson River Ranch, LLC

Tasks And Deliverables

Tuolumne River Post Construction Habitat Evaluation

Task ID	Task Name	Start Month	End Month	Deliverables
1	Project Management	1	36	Semiannual and final reports. Periodic invoices. Project Oversight.
2	O. mykiss habitat RM 43	1	36	Detailed habitat map for each season, written and photographic description of nature of habitat; calculation of increase habitat (square yards)
3	Predator fish habitat RM 43	1	36	Detailed habitat map for each season, written and photographic description of nature of habitat; calculation of decreased habitat (square yards). Description of stomach contents.
4	Vegetation Monitoring Bobcat Flat	1	36	Written report detailing methods and results of planting, natural recruitment.
5	Avian monitoring Grayson River Ranch	1	36	Written report detailing methods and rsults of restoration re avian species. This written report is then compiled with the San Joaquin valley reports PRBO is generating for analysis region wide.
6	Aquatic Monitoring Grayson River Ranch	1	36	Written reorts analyzing the use of the backwater sloughs and the health of the aquatic species using the sloughs.
7	Mammal Monitoring Grayson River Ranch	1	36	Written report outlining objectives, methods, results. The information is useful for the general San Joaquin studies

				Endangerd Species Recovery Program and can help guide future restoration with small mammals in focus.
8	Vegetation Monitoring Grayson River Ranch	1	36	Written reports, GIS maps superimposed on airphotos, photo documentation, analyzing the success of the different plants and methods of planting.

Comments

If you have comments about budget justification that do not fit elsewhere, enter them here.

Budget Summary

Project Totals

Labor	Benefits	Travel	Supplies And Expendables	Services And Consultants	Equipment	Lands And Rights Of Way	Other Direct Costs	Direct Total	Indirect Costs	Total
$39,400	$0	$2,940	$2,200	$299,250	$6,000	$0	$0	$349,790	$4,000	$353,790

Do you have cost share partners already identified?
Yes.

If yes, list partners and amount contributed by each:

California River Restoration Fund has offered to donate funds to cover the cost of office time required by CRRF staff estimated to have a value of $8,000. They have also offered to use their boats and equipment without charge.

Do you have potential cost share partners?
No.

If yes, list partners and amount contributed by each:

Are you specifically seeking non−federal cost share funds through this solicitation?
No.

Tuolumne River Post Construction Habitat Evaluation

Tuolumne River Post Construction Habitat Evaluation

Year 1 (Months 1 To 12)

Task	Labor	Benefits	Travel	Supplies And Expendables	Services And Consultants	Equipment	Lands And Rights Of Way	Other Direct Costs	Direct Total	Indirect Costs	Total
1: project management (12 months)	12000	0	900	600	0	0	0	0	$13,500	0	$13,500
2: O. mykiss habitat RM 43 (12 months)	0	0	0	0	41000	0	0	0	$41,000	0	$41,000
3: Predator fish habitat RM 43 (12 months)	0	0	0	0	27250	0	0	0	$27,250	0	$27,250
4: Vegetation Monitoring Bobcat Flat (12 months)	1560	0	120	200	0	0	0	0	$1,880	0	$1,880
5: Avian monitoring Grayson River Ranch (12 months)	0	0	0	0	4000	0	0	0	$4,000	0	$4,000
6: Aquatic Monitoring Grayson River Ranch (12 months)	0	0	0	0	6000	0	0	0	$6,000	0	$6,000
	0	0	0	0	6000	0	0	0	$6,000	0	$6,000

7: Mammal Monitoring Grayson River Ranch (12 months)											
8: Vegetation Monitoring Grayson River Ranch (12 months)	0	0	0	0	21750	0	0	0	$21,750	0	$21,750
Totals	**$13,560**	**$0**	**$1,020**	**$800**	**$106,000**	**$0**	**$0**	**$0**	**$121,380**	**$0**	**$121,380**

Year 2 (Months 13 To 24)

Task	Labor	Benefits	Travel	Supplies And Expendables	Services And Consultants	Equipment	Lands And Rights Of Way	Other Direct Costs	Direct Total	Indirect Costs	Total
1: project management (12 months)	12000	0	900	600	0	0	0	0	$13,500	2000	$15,500
2: O. mykiss habitat RM 43 (12 months)	0	0	0	0	39250	0	0	0	$39,250	0	$39,250
3: Predator fish habitat RM 43 (12 months)	0	0	0	0	27500	0	0	0	$27,500	0	$27,500
4: Vegetation Monitoring Bobcat Flat (12 months)	920	0	60	100	0	0	0	0	$1,080	0	$1,080

5: Avian monitoring Grayson River Ranch (12 months)	0	0	0	0	0	0	0	0	$0	0	$0
6: Aquatic Monitoring Grayson River Ranch (12 months)	0	0	0	0	6000	0	0	0	$6,000	0	$6,000
7: Mammal Monitoring Grayson River Ranch (12 months)	0	0	0	0	0	0	0	0	$0	0	$0
8: Vegetation Monitoring Grayson River Ranch (12 months)	0	0	0	0	10000	0	0	0	$10,000	0	$10,000
Totals	**$12,920**	**$0**	**$960**	**$700**	**$82,750**	**$0**	**$0**	**$0**	**$97,330**	**$2,000**	**$99,330**

Year 3 (Months 25 To 36)

Task	Labor	Benefits	Travel	Supplies And Expendables	Services And Consultants	Equipment	Lands And Rights Of Way	Other Direct Costs	Direct Total	Indirect Costs	Total
1: project management (12 months)	12000	0	900	600	0	0	0	0	$13,500	2000	$15,500

2: O. mykiss habitat RM 43 (12 months)	**0**	**0**	**0**	**0**	**39250**	**0**	**0**	**0**	$39,250	**0**	$39,250
3: Predator fish habitat RM 43 (12 months)	**0**	**0**	**0**	**100**	**27500**	**0**	**0**	**0**	$27,600	**0**	$27,600
4: Vegetation Monitoring Bobcat Flat (12 months)	**920**	**0**	**60**	**0**	**0**	**0**	**0**	**0**	$980	**0**	$980
5: Avian monitoring Grayson River Ranch (12 months)	**0**	**0**	**0**	**0**	**5000**	**0**	**0**	**0**	$5,000	**0**	$5,000
6: Aquatic Monitoring Grayson River Ranch (12 months)	**0**	**0**	**0**	**0**	**6000**	**6000**	**0**	**0**	$12,000	**0**	$12,000
7: Mammal Monitoring Grayson River Ranch (12 months)	**0**	**0**	**0**	**0**	**6000**	**0**	**0**	**0**	$6,000	**0**	$6,000
8: Vegetation Monitoring Grayson River Ranch (12 months)	**0**	**0**	**0**	**0**	**26750**	**0**	**0**	**0**	$26,750	**0**	$26,750

Totals	**$12,920**	**$0**	**$960**	**$700**	**$110,500**	**$6,000**	**$0**	**$0**	**$131,080**	**$2,000**	**$133,080**

Budget Justification

Tuolumne River Post Construction Habitat Evaluation

Labor

Year 1: Monitoring field work and writing 39 hrs at $40/hour. Year 2: Monitoring field work and writing 23 hrs at $40/hour. Year 3: Monitoring field work and writing 23 hrs at $40/hour.

Benefits

None

Travel

Estimate 2,600 miles for field work and project management in year 1. Estimate 2,500 miles for field work and project management in year 2. Estimate 2,500 miles for field work and project management in year 3.

Supplies And Expendables

Year 1: Office supplies $600 and field monitoring supplies $200. Year 2: Office supplies $600 and field monitoring supplies $100. Year 3: Office supplies $600 and field monitoring supplies $100.

Services And Consultants

Year 1: O. mykiss – Dennis Hood 57 hrs at $70; local guide 47 days @ $750/day Year 1: Predator fish – Dennis Hood 29 hrs at $70; local guide 34 days at $750/day Year 1: Avian – 5 days field work plus office work $800/day plus supplies Year 1: Aquatic –5 or 6 days at $1000/day for field work, analysis, reporting Year 1: Mammal –2 biologists for 10 days at $600/day each Year 1: Vegetation at Grayson River Ranch – 45 technician field days at $280/day; 10 days field and writing for Hart @$95/hr Year 1: 2 aerial rectified photos at $1750 each

including post processing

Year 2: O. mykiss – Dennis Hood 57 hrs at $70; local guide 47 days at $750/day Year 2: Predator fish – Dennis Hood 29 hrs at $70; local guide 34 days at $750/day Year 2: Avian – None Year 2: Mammals – None Year 2: Vegetation at Grayson River Ranch – 11 technician field days at $280/day; 74 hours at $95/hr for Hart field and writing

Year 3: O. mykiss – Dennis Hood 57 hrs at $70; local guide 47 days at $750/day Year 3: Predator fish – Dennis Hood 29 hrs at $70; local guide 34 days at $750/day Year 3: Avian – 5 days field work plus office work $800/day plus supplies Year 3: Aquatic – 5 or 6 days at $1000/day for field work, analysis, reporting Year 3: Mammals – 2 biologists for 10 days at $600/day ea Year 3: Vegetation – 40 technician field days at $280/day; 144 hours at $95/hr for Hard field work, analysis, and writing Year 3: Aerial photo rectified with post processing $1750

Equipment

None

Lands And Rights Of Way

None

Other Direct Costs

None

Indirect Costs/Overhead

Year 1: Aerial photos with post processing Year 2: Aerial photos with post processing

Comments

Environmental Compliance

Tuolumne River Post Construction Habitat Evaluation

CEQA Compliance

Which type of CEQA documentation do you anticipate?
X none
− negative declaration or mitigated negative declaration
− EIR
− categorical exemption

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.

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?
X none
− environmental assessment/FONSI
− EIS
− categorical exclusion

Identify the lead agency or agencies.

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.

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

State Permits And Approvals	Required?	Obtained?	Permit Number (If Applicable)
scientific Collecting Permit	X	–	
CESA Compliance: 2081	–	–	
CESA Complance: NCCP	–	–	
1602	–	–	
CWA 401 Certification	–	–	
Bay Conservation And Development Commission Permit	–	–	
reclamation Board Approval	–	–	
Delta Protection Commission Notification	–	–	
state Lands Commission Lease Or Permit	–	–	
action Specific Implementation Plan	–	–	

other	–	–	

Federal Permits And Approvals	Required?	Obtained?	Permit Number (If Applicable)
ESA Compliance Section 7 Consultation	–	–	
ESA Compliance Section 10 Permit	–	–	
Rivers And Harbors Act	–	–	
CWA 404	–	–	
other	–	–	

Permission To Access Property	Required?	Obtained?	Permit Number (If Applicable)
permission To Access City, County Or Other Local Agency Land Agency Name	–	–	
permission To Access State Land Agency Name	–	–	
permission To Access Federal Land Agency Name	–	–	
permission To Access Private Land Landowner Name `Grayson River Ranch, LLC`	X	X	

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

Land Use

Tuolumne River Post Construction Habitat Evaluation

Does the project involve land acquisition, either in fee or through easements, to secure sites for monitoring?
X No.
– Yes.

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 provide operations and maintenance services.

Is there an existing plan describing how the land and water will be managed?
– No.
– Yes.

Will the applicant require access across public or private property that the applicant does not own to accomplish the activities in the proposal?
– No.
X Yes.

Describe briefly the provisions made to secure this access.

Written permission has been acquired for access at Grayson River Ranch. Bobcat Flat RM 43 access routes are owned by Friends of the Tuolumne.

Do the actions in the proposal involve physical changes in the current land use?
X No.
– Yes.

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?
X No.
– Yes.

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?
X No.
– Yes.

Is the land affected by the project currently under a Williamson Act contract?
– No.
– Yes.

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

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