

# **Proposal Reviews**

## **#179: Tuolumne River - Big Bend Project**

Tuolumne River Preservation Trust

**Final Selection Panel Review**

**Initial Selection Panel Review**

**Research and Restoration Technical Panel Review**

**Land Acquisition**

**San Joaquin Regional Review**

**External Scientific Review**

#1

#2

#3

**Prior Performance/Next Phase Funding**

**Environmental Compliance**

**Budget**

# Final Selection Panel Review:

## CALFED Bay-Delta 2002 ERP PSP Final Selection Panel Review

**Proposal Number:** 179

**Applicant Organization:** Tuolumne River Preservation Trust

**Proposal Title:** Tuolumne River - Big Bend Project

Please provide an overall evaluation rating.

<b>Fund</b>	
As Is	-
In Part	X
With Conditions	-
Consider as Directed Action	-
Not Recommended	-

Amount: **\$706,649**

Conditions, if any, of approval (if there are no conditions, please put "None"):

**None**

Provide a brief explanation of your rating:

**Three comment letters were submitted during the public comment period that supported full funding for the project. The local assemblyman wrote endorsing the project. A letter from the applicant noted that the project had been approved for funding in full by the Department of Water Resources Floodplain Protection Corridor Program. The applicant urged CALFED to fully fund the project or to at least coordinate with DWRs floodplain program without creating unnecessary duplication and delay. A third letter, from the Department of Conservation, recommended that the project, which will require cancellation of a Williamson Act contract, compensate for its impacts to farmlands by purchasing agricultural conservation easements on other, similarly-sized properties.**

**In response to these comments, the Selection Panel recommends that the Ecosystem Restoration Program continue to consider this proposal in two parts, recommending funding for the acquisition with the remaining funding depending on a revised proposal or plan for the restoration and monitoring portions of the proposal. The Selection Panel further recommends that the ERP coordinate with DWRs floodplain program to ensure that the project meets standards established for ERP projects without creating unnecessary duplication and delay. The panel also urges DWR to assure that the project's environmental documents identify the project's impacts on agriculture and appropriate measures, if necessary, to mitigate significant adverse effects.**

## Initial Selection Panel Review:

### CALFED Bay-Delta 2002 ERP PSP Initial Selection Panel Review

**Proposal Number:** 179

**Applicant Organization:** Tuolumne River Preservation Trust

**Proposal Title:** Tuolumne River - Big Bend Project

Please provide an overall evaluation rating.

#### Explanation of Recommendation Categories: Fund

- **As Is** (a proposal recommended for funding as proposed)
- **In Part** (a proposal for which partial funding is recommended for selected project phases or components)
- **With Conditions** (a proposal for which funds are recommended if the applicant contractually agrees to meet the specified conditions)

**Consider as Directed Action in Annual Workplan** (a proposal addressing a high priority action that requires some revision followed by additional review prior to being recommended for funding)

**Not Recommended** (a proposal not currently recommended for funding-after revision may be considered in the future)

#### Note on "Amount":

For proposals recommended as Fund As Is, Fund In Part or Fund With Conditions, the dollar amount is the amount recommended by the Selection Panel.

For proposals recommended as Consider as Directed Action in Annual Workplan, the dollar amount is the amount requested by the applicant(s).

Fund	
As Is	-
In Part	X
With Conditions	-
Consider as Directed Action	-
Not Recommended	-

Amount: **\$706,649**

Conditions, if any, of approval (if there are no conditions, please put "None"):

**Fund acquisition-related components of the proposal.**

Provide a brief explanation of your rating:

**The proposed project will complement and enhance the benefits of previously funded CALFED and CVPIA funded restoration efforts in an area where both CALFED and CVPIA have focused restoration activities. The project received an above average rating from the technical panel and a high rating from the regional review panel. The applicants are dealing with willing sellers, have a letter of support from the Tuolumne River Coalition (which includes the Stanislaus County Parks and Recreation Department and other local government agencies), and will improve stream meander and natural floodplain and flood processes. The acquisitions are time sensitive. Although some of the soils on the parcels meet the criteria for prime farmland, the lands also qualify for the Natural Resource Conservation Service Floodplain Protection Program and are not presently in agriculture. These lands' exposure to flooding impairs the economic feasibility of farming them. The technical panel strongly recommended the development of a more technically rigorous design for the monitoring component of the proposal. The Selection Panel concurs with the technical panel, and recommends funding the acquisition related components of the proposal. The Selection Panel also recommends that the applicant revise the restoration and monitoring portions of the proposal to address the technical panels comments and submit a revised proposal for consideration as a directed action.**

# Research and Restoration Technical Panel Review:

## CALFED Bay-Delta 2002 ERP PSP Research and Restoration Technical Panel Review Form

**Proposal Number:** 179

**Applicant Organization:** Tuolumne River Preservation Trust

**Proposal Title:** Tuolumne River - Big Bend Project

**Review:**

**Please provide an overall evaluation summary rating:**

**Superior:** outstanding in all respects;

**Above Average:** Quality proposal, medium or high regional value, and no significant administrative concerns;

**Adequate:** No serious deficiencies, no significant regional impediments, and no significant administrative concerns;

**Not Recommended:** Serious deficiencies, significant regional impediments or significant administrative concerns.

<b>Overall Evaluation Summary Rating</b>	<b>Provide a brief explanation of your summary rating</b>
-Superior	<b>The proposal largely represents an investment in acquiring easements for 197 acres along the Tuolumne River and restoring the native riparian vegetation on 254 acres. Most of the costs are committed to acquiring easements and planting vegetation. The panel considers this to be a wise use of the available funds. The monitoring is largely descriptive and it would be difficult to attribute a response to the project. A better design would include reference sites and appropriate measures. We strongly recommend the development of a more technically rigorous design so that the observed responses can be attributed to the restoration practices.</b>
XAbove average	
-Adequate	
-Not recommended	

1. **Goals and Justification.** Does the proposal present a clear statement of goals, objectives and hypotheses? Does the proposal present a clear justification and conceptual model for the project?

**The project proposes to acquire easements and restore 254 acres of floodplain along the Tuolumne River. The specific objectives are identified. Testable hypotheses are provided (though monitoring described in the proposal is adequate to test the hypotheses). The proposal adequately presents a justification of the project based on CalFed goals and sensitive species. There is an explicit conceptual framework though it is a general framework developed for CalFed by Stillwater Sciences.**

2. **Likelihood of Success (Approach, Feasibility, Capabilities and Performance Measures).** Is the project likely to succeed based on the approach, feasibility and project team capabilities? Are the proposed performance measures adequate for measuring the project's success?

**The proposed actions are feasible and the potential success of the project is high. Revegetation relies on intensive plantings of floodplain vegetation. The project should include natural colonization, especially through flooding, as a restoration approach as well as intensive plantings. Measurement of fish abundance and distribution does not include reference sites or statistically sound comparative measures. This should be improved to capture as much information as possible from the investment.**

3. **Outcomes and Products.** Will the project advance the state of scientific knowledge in general and/or make an important contribution to the state of knowledge of the Bay-Delta Watershed? For restoration proposals, is the project likely to contribute to ecosystem restoration or species recoveries in a significant way? Will the project produce products useful to decision-makers and scientists?

**The project will increase the understanding of the Bay Delta Watershed. The project has the potential to reveal the degree of hydrologic function that can be regained by floodplain reconnection. Measures of fish response and native vegetation recovery will be valuable information if stronger measurement designs are developed. All three measures of ecosystem performance need stronger experimental designs, with off site reference systems and provisions for long-term measurements. The project will contribute to the restoration of the Tuolumne River floodplain over a limited area (254 acres), and sensitive species occur in that reach.**

4. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

**The budget is \$1.7 million, which is high. The cost is >\$6,500/acre. This may be consistent with acquiring easements, implementation, and monitoring.**

5. **Regional Review.** How did the regional panel(s) rank the proposal (High, Medium, Low)? Did the regional panel(s) identify significant benefits (regional priorities, linkages with other activities, local involvement) or impediments (local constraints, conflicts with other activities, lack of local involvement) to this proposal? What were they?

**Regional panel ranked the proposal as High.**

6. **Administrative Review.** Were there significant concerns about the proposal with regard to the prior performance, environmental compliance and budget administrative reviews? What were they?

**Only minor questions or comments were raised.**

**Miscellaneous comments:**

**None**

## **Land Acquisition:**

**Proposal Number:** 179

**Applicant Organization:** Tuolumne River Preservation Trust

**Proposal Title:** Tuolumne River - Big Bend Project

1. Is the site's ecological importance documented in the proposal?

XYes -No

If yes, please import relevant text and citations here:

**This is a proposal to acquire approximately 197 acres and restore approximately 254 acres of floodplain and riparian habitat along the lower Tuolumne. The project area, west of the City of Modesto is within a sand-bedded reach that has been subject to agricultural encroachment in the floodway, rip-rap, private levees, loss of riparian vegetation, loss of offchannel wetlands, and loss of channel migration.**

**We propose to purchase fee simple on 2 parcels and a conservation easement on a third. Since a different landowner owns each parcel, we propose to complete each transaction as a separate phase: 1. Todd (APN 017-45-17) a 50-acre parcel on the north side of the river.... This parcel lies on the inside of a sharp meander bend and therefore is an excellent opportunity to restore natural channel-migration processes.... 2. Venn II (APN 017-49-07) a 132-acre parcel on the south side of the river. This parcel lies directly across the river from the Todd parcel. The owners have sold a floodplain easement to the Natural Resources Conservation Service (NRCS) on an adjacent 56-acre parcel (Venn I).... 3. Bancroft II (a portion of APN 017-45-01) approximately 16-acres located adjacent to the Todd property and making up the remaining portion of the inside of the meander bend. Together the Todd and Bancroft properties would be important for restoring natural fluvial processes in this stretch of the river.**

**The three parcels would complement existing conservation easements on Grayson River Ranch (140-acres), Venn I (56-acres), and Bancroft I (58-acres). Together, all of the parcels would total 452 acres of land preserved for conservation purposes. About 3 miles of river frontage on both sides of the river would be preserved.**

**The floodplain has been stabilized with riprap, berms, and small levees. Additionally, the floodplain has been laser-leveled on most of the land for cultivation purposes. Breaching berms and regrading the floodplain to create a small number of swales and sloughs will allow access to floodplain surfaces more frequently than presently occurs. While the Grayson River Ranch project (adjacent to the Venn I easement), created two swales that drain to a single point in the river, we plan less intensive earthmoving. Most earthmoving would be on the Venn parcels and will consist of breaching two low agricultural berms to allow floodwaters to flow more freely across the floodplain (Fig. 3). Any floodplain depressions will be carefully contoured to ensure they drain back out to the river to ensure stranding of juvenile salmonids does not occur. On the Todd and Bancroft II parcels, we propose to enhance an existing small (less than 5-acre) wetland area (Fig. 3) by enlarging it slightly and removing nonnative invasive vegetation. On the Venn easements, we would contract directly with the landowner to implement these actions, as he is a farmer with**

access to equipment and employees.

**All woody exotic plant species within the reach should be removed during floodplain regrading....Preserving as much existing native woody riparian vegetation as feasible is a primary goal of the project. Cottonwood, tree willow, and valley oak stands should not be removed during construction. The valley oaks that are present in this reach will be utilized for seed collection, and are important contributors to future recruitment. Nearly all cottonwoods should be preserved to increase age class diversity and riparian canopy structure. Mature cottonwoods (>25 years), regardless of stand size, should not be removed because they provide the seed source for future recruitment. After earthwork is completed, valley oak, Fremont cottonwood, and willows will be planted on floodplain surfaces appropriate for their life history requirements. Floodplain species will be willows, alders and cottonwoods. Willows will be planted nearer the active channel/bankfull channel transition, while valley oaks will be planted on higher floodplains and terraces near the valley walls. Revegetation patterns will reflect plant species patterns identified during the riparian inventory conducted in 1996. Much of the revegetation materials will come from onsite sources (valley oak seeds, willow cuttings, cottonwood cuttings), and species not found onsite (sedges, alder, and Oregon ash) should be purchased from local nurseries that obtain it from within the Tuolumne River corridor. Cluster planting (vegetation patches) rather than row planting should be encouraged to recreate a more natural site appearance, ease watering and maintenance, and increase habitat diversity. A plant ecology/biology consultant will be hired to complete the planting designs and implement the planting....**

**The project would help improve stream meander and natural floodplain and flood processes by creating a floodplain that is more frequently inundated and that is less confined by nonnative invasive species. The project would target riparian, freshwater fish, and essential fish habitats. The project would improve habitat of splittail, chinook salmon, and steelhead by improving channel-floodplain connectivity. Other species that may benefit include the western pond turtle and Swainson's hawk.**

2. Is the owner's willingness to sell the site documented in the proposal?

Yes -No

If no, please explain:

3. Is evidence of local government support for the purchase included in the proposal?

Yes -No

If yes, please explain:

**Letter of endorsement from Tuolumne River Coalition, which includes parks department from Stanislaus County, the local gv't which has jurisdiction over the area.**

4. Is the use proposed for the site after its purchase clearly consistent with the site's general plan designation and zoning?

-Yes No



If no, please explain:

**The site is designated for agriculture in the county general plan, + zoned general agriculture. It isn't clear whether habitat restoration is a permitted by the local gov't zoning standards + planning policies. According to the application, this project is consistent with several goals of the Conservation/Open Space Element of Stanislaus County's General Plan, including: Goal One - encourage the protection and preservation of natural and scenic areas throughout the county; Goal Four - Provide for the open-space recreational needs of the residents of the county; Goal Five - Reserve, as open space, lands subject to natural disaster in order to minimize loss of life and property of residents of Stanislaus County; and Goal Ten - protect fish and wildlife species of the county.**

5. Is the land mapped as prime farmland, farmland of statewide significance, unique farmland, or farmland of local importance?

Yes -No

If yes, please explain the classification:

**Some of the soils on all three parcels met the criteria for "Prime Farmland" designation when the soil survey was completed by the NRCS in 1964. The applicant asserts, however, that when these lists were created, the vulnerability to flooding was not known. The lands now qualify for NRCS Floodplain Protection Program, which was created to remove floodprone lands from production. According to the applicant, the sites' exposure to repetitive flooding is directly in conflict with one of the criteria for Prime Farmland Designation.**

Is the site under a Williamson Act contract?

Yes -No

Will use of the site change from agriculture after its purchase?

-Yes No -Not Currently in Agriculture

6. Is this a time-sensitive acquisition opportunity, according to the proposal?

Yes -No

If yes, please import relevant text here:

**Options to secure 2 of the parcels are expiring during the grant review period. The Todd option expires March 15, 2001, at which point the opportunity may be permanently lost, because the parcel would return to the open market. The Venn II option is with the NRCS, and will require cost-share funding to be completed. If this deal is lost, we seriously risk losing an excellent private partner/landowner.**

Other Comments:

## San Joaquin Regional Review:

**Proposal Number:** 179

**Applicant Organization:** Tuolumne River Preservation Trust

**Proposal Title:** Tuolumne River - Big Bend Project

Overall Ranking:   -Low   -Medium   **XHigh**

Provide a brief summary explanation of the committee's ranking:

**Project addresses Regional Priorities identified in Draft Implementation Plan. Project seems well coordinated and ready to implement.**

1. Is the project feasible based on local constraints?

**X**Yes -No

How?

**Willing landowners, NRCS Partnership, RCD willing to take title. No obvious roadblocks.**

2. Does the project pursue the restoration priorities applicable to the region as outlined in the PSP?

**X**Yes -No

How?

**Good linkage with floodplain restoration objectives in regional priorities.**

3. Is the project adequately linked with other restoration activities in the region, such as ongoing implementation projects and regional planning efforts?

**X**Yes -No

How?

**Actions specified in Tuolumne River Restoration Plan; builds on Gayson River Ranch experience. nexus with Tuolumne River Regional Park.**

4. Does the project adequately involve local people and institutions?

**X**Yes -No

How?

**TRPT staff is in Modesto. Connections thru Tuolumne River Coalition, Tuolumne River Technical Advisory Committee, local RCD, landowners. Volunteers to be involved in planting and restoration actions.**

Other Comments:

**none**

# External Scientific: #1

## Research and Restoration External Scientific Review Form

Proposal Number: **179**

Applicant Organization: **Tuolumne River Preservation Trust**

Proposal Title: **Tuolumne River - Big Bend Project**

### Conflict of Interest Statements:

I have no financial interest in this proposal.

Correct

Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

**none**

### Review:

Please provide an overall evaluation summary rating:

**Excellent: outstanding in all respects;**

**Good: quality but some deficiencies;**

**Poor: serious deficiencies.**

<b>Overall Evaluation Summary Rating</b>	<b>Provide a brief explanation of your summary rating</b>
-Excellent	<b>My overall evaluation of the project is "good." If successful, the project will restore and reconnect up to 250 acres of floodplain with the channel, potentially creating important spawning and rearing habitats for anadromous and other native fish (salmon, steelhead, splittail) and stimulating natural regeneration of riparian forest. It will also aid in restoration of significant length of river, when combined with adjacent restoration projects. However, uncertainties exist as to the success of the proposed floodplain re-engineering in restoring natural regeneration of riparian vegetation and fish habitat. The proposal is also vague in terms of design specifications for the area of floodplain that will be inundated and the frequency with which it will be inundated, although this may not be knowable until a detailed site assessment is carried out. Finally, the project is rather expensive. I would recommend holding off on extensive planting of some riparian tree species (cottonwood and willow) until monitoring reveals whether restoration of flooding stimulates natural recruitment (and hence reduces the need for planting). If possible, I would recommend cutting the cost of the project by up to 25%, focusing first on land acquisition and the actual work needed to reconnect the floodplain to the channel, followed by monitoring of fish usage and inundation frequency, and low intensity, long-term (5 years or more) monitoring of riparian vegetation regeneration.</b>
XGood	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

**Restoration of floodplain connectivity, and with it, ecological processes, is a timely and important topic. The goals are relatively clear: to improve the functionality of the floodplain to support riparian vegetation and fish (splittail, salmon, and steelhead) spawning/rearing habitat by reconnecting the floodplain to the river and actively managing the vegetation. However, specific measures of success need to be determined. In particular, goals or design specifications for reconnecting the floodplain and channel should to be more specific (at what frequency will the site be inundated or at what flows, what proportion of the floodplain, etc.). The hypothesis is that the restoration effort (including floodplain reconnection and vegetation management) will achieve improved river-floodplain connectivity, restore riparian successional trajectories and riparian habitat complexity, and improve fish spawning/rearing habitat. These will be tested via pre- and post-project monitoring. The objectives by which to achieve these goals are clear: to acquire or obtain easements on floodplain parcels, reconnect the floodplain to the river via removal of berms, etc., remove exotic tree species, preserve or plant native riparian trees, and to construct a trail for limited public use.**

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

**The conceptual model seems reasonable overall and is best presented in Figure 2. Much of the conceptual model is based on a detailed Restoration Plan that exists for the Tuolumne. Ecological functionality of the floodplain is limited by insufficient connectivity between the floodplain and channel, from topographic simplification from past agriculture (laser leveling), and from the presence of exotic tree species. Past agricultural activities may have also contributed to soil erosion and water pollution and exotic tree species may have contributed to reduced opportunities for native riparian tree species. Retirement of agricultural land, some re-engineering of floodplain surfaces (to produce wetlands and connect wetlands to the river), and removal of exotic tree species are expected to improve fish habitat, provide geomorphic conditions for natural regeneration of riparian trees, and improve water quality. Preservation of existing riparian vegetation and planting of new vegetation will help stabilize the site and provide seeds for natural regeneration. The model also specifies parameters to be monitored: access by fish to floodplain sloughs, hydrologic connectivity of the channel and floodplain, and natural vegetation regeneration and successional processes.**

**However, there were weaknesses in the conceptual model. One item that was not made clear is the extent to which river flow is influenced by upstream dams or diversions. Upstream flow regulation could be an important limiting factor to consider in the restoration, if the timing and magnitude of floods is severely altered. Flow magnitude will be important for determining channel migration rates, and hence, creation of sediment bars for colonization by cottonwoods and willows and the timing of floods will need to match the life cycles of the fish and the timing of seed release of riparian species. Overall, the conceptual basis for restoring riparian vegetation appears to be weaker (particularly in the text) than that for floodplain re-engineering for restoration of fish habitat. Details about the limiting factors for riparian vegetation are sketchy, with inadequate mention of the differing ecologies and requirements of different species (cottonwoods vs. oaks, etc.) and few technical citations.**

**Also, although it is asserted that exotic species are adversely affecting recruitment of native tree species and/or channel migration, no evidence of this is given. However, the author does acknowledge that the key uncertainty of the project is the impact of hydrologic restoration on the riparian vegetation. This is a little troubling, given the expense that will be allocated to exotic species removal and planting of native species. The nearby Grayson Ranch project, on which similar methods were used, is mentioned as an initial success, but few details are given about lessons learned from that project.**

**The choice of a full-scale implementation seems warranted, given the strategic opportunity to reconnect and restore a large area of floodplain habitat (about 250 acres), and the potential for linkage with other restoration projects in the area. However, from the description and the map (Figure 3), it is not clear whether all or only parts of the site will be reconnected to flooding processes**

- 3. Approach. Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?**

**The approach seems appropriate and well-designed, overall. Monitoring the effects of restoration on floodplain inundation, use by fish, and riparian vegetation response could all provide useful information to decision-makers. However, given the uncertainty of vegetation response and of the limiting factors on vegetation along this reach, I would be hesitant to invest much of the project funds and effort in plantings, at least initially. A very high priority of the project should be to hire or contract a plant ecologist who is an expert in California riparian systems. The applicants could increase the scientific knowledge gained and possibly the cost-effectiveness of the project by first monitoring to what extent reconnection of the floodplain will stimulate regeneration of native species without planting. Given the aim of the project to practice adaptive management, it would be interesting in the first 1-2 years of the project to examine the potential for restored flooding to reinitiate natural regeneration of cottonwoods and willows (and possibly sedges and other wetland plants). Lessons from the Consumnes River suggest that natural regeneration may be possible, if agricultural fields are exposed to floodwaters at a time when cottonwood and willow seeds are being released by the remnant trees on the sites. This would be a good test of whether or not the disconnection between floodplain and channel is really what is limiting riparian vegetation development. Valley oak, on the other hand, probably needs more direct restoration attention. Thus, I would prioritize planting of valley oak (with precautions to avoid mortality due to rodents) and experiment with letting the river help restore cottonwoods and willows as a closely monitored natural experiment. A big question here is whether having tree-sized cottonwoods and willows immediately is a priority of the restoration (for aesthetic purposes, to stabilize erosive banks, etc.). Although restoration lessons could also be learned by observing the survival of planted trees, a more informative and cost-effective method would be to see (and monitor) natural recruitment capabilities first. Also, although exotic removal is probably warranted, exotics are probably not the limiting factor on native revegetation. Indeed, it might be interesting to observe the effect of restored flooding on mortality of some of the exotic species as well.**

**One issue that was not clear is the frequency with which the floodplain is likely to be inundated under the restoration design (and how often it is inundated now). Rather than being a hypothesis, it seems that success of this phase of the project should have a high degree of confidence (and specific goals) before restoration begins. A close reading of the proposal suggests that the flows at which inundation should occur are on the order of 4000-5000 cfs. This should be more clearly stated as a design specification in the approach and objectives. To an outside reader,**

it is not clear how often flows of this magnitude occur. Another issue that was not clear is the proportion of the floodplain that will be inundated regularly. Since no berms are shown or targeted for removal on the north side of the river, does that mean that natural flooding already occurs there?

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

Restoration of flooding should have high feasibility, if agricultural berms and floodplain leveling are the limiting factors on floodplain inundation. The responses of riparian vegetation and anadromous fish appear to be less certain. As I suggested before, large scale vegetation planting should probably wait until it is clear that hydrologic restoration has been successful and until it is clear that planting is needed for all species. Payoffs from successful restoration, however, could be large in terms of restoration of high-quality habitat (about 250 acres) and could provide a valuable demonstration for other restoration efforts, provided that the responses of fish and natural regeneration of riparian trees are carefully monitored within an adaptive management framework.

The availability of the properties for purchase or permanent easement, the partnership (and cost sharing) with NRCS, and the proximity to other restoration sites increase the feasibility and potential benefits (in terms of context) of the proposed work. According to the applicant, similar methods have shown strong initial success on the nearby Grayson River Ranch restoration project.

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

The performance measures seem appropriate for determining project success, although goals should be stated more explicitly and quantitatively. For example, how frequently should the site be inundated? How much of the site should be inundated? These goals and expectations are not clearly spelled out. What frequency of fish usage or degree of vegetation regeneration would constitute success?

Also, vegetation monitoring over just a 1-2 year period does not seem sufficient. While the proposal suggests that some monitoring will take place over a five year period, the vegetation monitoring appears to be fairly short. What if floods of adequate size do not occur during the monitoring period? Given the episodic nature of tree recruitment events and floods, monitoring of natural regeneration of cottonwoods and willows should be conducted for at least 5 years. If necessary, I would suggest sacrificing some intensity of vegetation sampling in order to perform more cost-effective monitoring on permanent plots over a longer time period. As suggested in the proposal, sampling locations for vegetation response should be stratified by elevation interval, inundation frequency or landform. Understanding the phenology of species on the site, particularly flood-dependent species like cottonwood and willow, would be valuable and should focus on the timing of seed dispersal (although there are some data on this in the literature).

For all parts of the project, frequency and extent of floodplain inundation should be monitored. Although the proposed methods are suitable, why not monitor flood extent by doing a fly-over and aerial photography? These could be compared with aerial photographs (and GIS work?) being used to assess baseline conditions.

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

**Products of value could come from monitoring, particularly if monitoring regeneration of oaks and riparian vegetation and fish use of the floodplain is made an annual event for at least the first 5 years, and possibly longer. As I suggested earlier, this project could provide a nice experiment on the effects of restoring floodplain connectivity on natural recruitment of riparian tree species. Perhaps such monitoring could utilize local volunteers and provide a means of community outreach. The creation of a trail, along with interpretive sign posts, will also be a valuable service to the community and a means of outreach. Success of the restoration itself would provide valuable riparian habitat, including habitat for spawning/rearing of at risk anadromous fish species, over the 250 acres of the restoration site and could help increase connectivity with nearby restoration sites.**

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

**The Tuolumne Trust has been awarded two other CALFED or CVPIA grants, but work has not commenced yet. The project manager from the Tuolumne Trust has only been with the organization for 1.5 years, but formerly worked with the US Army Corps of Engineers as a watershed planner. The NRCS district conservationist is experienced in acquisition of floodplain easements in the watershed and NRCS has completed several restoration projects on the easements. NRCS will be cost-sharing on property acquisitions and easements. Long-term management of the sites will be by the East Stanislaus Resource Conservation District (RCD), which was involved with the successful Grayson Ranch restoration project. The bulk of the technical work will apparently be done by Stillwater Sciences, a biological/geological consulting firm with experience in the Tuolumne system. Thus, the applicants seem reasonably qualified, but their level of experience in a restoration project of this scale is not well-documented.**

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

**The project is rather expensive at \$1.68 million, and will restore around 250 acres of floodplain (thus about \$6720 per acre). Approximately 1/3 of this is for land acquisition or easements, and about 1/3 for consultant fees and services. For the monitoring, \$270,000 is budgeted. Although I am in favor of thorough monitoring, the cost seems a little excessive. In the budget, it is not clear how much is allocated to the tree planting portion of the restoration. I would recommend scaling back some of the tree planting, particularly of cottonwood and willow, at least at first, in order to see if restored flooding enables establishment of cottonwood and willow with only minimal planting. I would also try to reduce the cost of monitoring and invest the vegetation monitoring effort in perhaps less intensive, but longer term (at least 5 years) monitoring of cottonwood-willow recruitment on permanent quadrats. Perhaps the budget could be scaled back by 15-25% without losing the key elements of the project. The project could carry high benefits over the long-term by reconnecting substantial parts of the floodplain with the channel, although the likelihood that this will restore the other functions (fish and vegetation regeneration) is less clear. The value of the project is enhanced by its close proximity to other ongoing restoration projects and its position at a geomorphically active part of the river. The first priorities of the project should be the acquisition of the land and re-engineering of the floodplain, followed by monitoring of fish usage, hydrology, and natural vegetation establishment.**



**Miscellaneous comments:**

## External Scientific: #2

### Research and Restoration External Scientific Review Form

Proposal Number: **179**

Applicant Organization: **Tuolumne River Preservation Trust**

Proposal Title: **Tuolumne River - Big Bend Project**

#### Conflict of Interest Statements:

I have no financial interest in this proposal.

Correct

Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

**none**

#### Review:

Please provide an overall evaluation summary rating:

**Excellent: outstanding in all respects;**

**Good: quality but some deficiencies;**

**Poor: serious deficiencies.**

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
<input checked="" type="checkbox"/> Excellent	<b>The proposal will acquire easements along the Tuolumne River and restore native vegetation. The restoration would be positive for the river, but more attention to allowing natural processes to restore vegetation is needed. The monitoring is descriptive and will not be a useful test of the effectiveness. Why do they not include reference sites?</b>
<input type="checkbox"/> Good	
<input type="checkbox"/> Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

**The proposal clearly states the goal of acquiring easements and restoring 254 acres of floodplain along the Tuolumne River. The specific objectives are identified. Testable hypotheses are provided (though it is not clearly that the monitoring described in the proposal is adequate to test the hypotheses).**

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

**The proposal adequately presents a justification of the project based on CalFed goals and sensitive species. There is an explicit conceptual framework though it is a general framework developed for CalFed by Stillwater Sciences.**

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

**Revegetation relies on intensive plantings of floodplain vegetation. The project should include natural colonization, especially through flooding, as a restoration approach as well as intensive plantings. Measurement of fish abundance and distribution does not include reference sites or statistically sound comparative measures. This should be improved to capture as much information as possible from the investment.**

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

**The proposed actions are feasible and the potential success of the project is high.**

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

**The measures of performance are adequate for measuring the success of the project.**

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

**The project will increase the understanding of the Bay Delta Watershed. The project has the potential to reveal the degree of hydrologic function that can be regained by floodplain reconnection. Measures of fish response and native vegetation recovery will be valuable information. All three measures of ecosystem performance need stronger experimental designs, with off site reference systems and provisions for long-term measurements. The project will contribute to the restoration of the Tuolumne River floodplain over a limited area (254 acres), and sensitive species occur in that reach. The outcome of this proposal has significance to decision makers. Ecologists and environmental scientists will gain information about hydrologic responses, fish behavior and distribution, and native plant recovery.**

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

**none**

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

**The budget is \$1.7 million, which is substantial but consistent with acquiring easements, implementation, and monitoring.**

**Miscellaneous comments:**

# External Scientific: #3

## Research and Restoration External Scientific Review Form

Proposal Number: 179

Applicant Organization: Tuolumne River Preservation Trust

Proposal Title: Tuolumne River - Big Bend Project

### Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

In the blank below please explain any connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection):

none

### Review:

Please provide an overall evaluation summary rating:

**Excellent:** outstanding in all respects;

**Good:** quality but some deficiencies;

**Poor:** serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
XExcellent	<b>The weakness of the proposal is in the fish monitoring as described above. Considering the likely benefits and the extensive justification provided by the proponents, I did not feel this drawback was enough to reduce its rating to Good.</b>
-Good	
-Poor	

1. **Goals.** Are the goals, objectives and hypotheses clearly stated and internally consistent? Is the concept timely and important?

**The goal, objectives and hypotheses are clearly stated. The concept of restoring floodplain habitat to benefit riparian vegetation, associated wildlife, and to provide fish spawning and rearing habitat is sound.**

2. **Justification.** Is the study justified relative to existing knowledge? Is a conceptual model clearly stated in the proposal and does it explain the underlying basis for the proposed work? Is the selection of research, pilot or demonstration project, or a full-scale implementation project justified?

**The proponents extensively cite the McBain and Trush (2000) report that provides the justification for the proposed project. The justification for the morphology and riparian habitat benefits is strong, however there was not enough detail provided for me to determine the extent of habitat loss for chinook and splittail in this system, and the extent to which this project will improve the situation.**

3. **Approach.** Is the approach well designed and appropriate for meeting the objectives of the project? Are results likely to add to the base of knowledge? Is the project likely to generate novel information, methodology or approaches? Will the information ultimately be useful to decision-makers?

**The approach is well designed. I have little doubt that the project will yield informative results about the benefits to riparian vegetation and natural hydrologic processes (floodplain inundation). I am less convinced about their ability to demonstrate fish population responses (see comments below).**

4. **Feasibility.** Is the approach fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives?

**Yes, high, yes.**

5. **Project-Specific Performance Measures.** Does the project include appropriate performance measures to measure success relative to the project's goals and objectives? Is there enough detail as to how the performance measures will be quantified? For restoration projects, are monitoring plans explicit and detailed enough to determine if performance measures will be adequately assessed?

**My only major concern relates to the fish sampling. Demonstrating that fish are present in the restored habitat does not demonstrate that the new habitat enhances the population. It may be that fish are simply attracted from one type of habitat to another, with little or no growth/survival benefit. It is possible that these new areas will intensify predation impacts or competitive interactions. The monitoring program appears focused on documenting fish use (target species only). I think it would also be informative to document the presence and density of competitors/predators. In addition, the investigators should compare growth rates and size of fish using the side channels with fish from other habitats. This may require the use of mark-recapture methods (to quantify how long fish have been in the side channels). Ultimately, it would be useful to quantify production from these areas and compare this production with mainstem values. This could be accomplished by a marking/fence program. Few details are provided regarding the fish monitoring component, but from what is written I am pretty sure it does not include these approaches. The proponents should review the literature on the evaluation of side channels developed for coho to see the range of options that are available to them. Considering the cost of the project and that one of the key objectives is to improve fish populations, the weak monitoring program for fish is a fairly glaring omission.**

6. **Products.** Are products of value likely from the project? Specifically for restoration projects, are products of value also likely from the monitoring component? Are interpretative outcomes likely from the project?

**The restoration product will likely be highly valuable from my experience in floodplain/side channel habitats. The quantification of fish benefits will be weak.**

7. **Capabilities.** What is the track record of applicants in terms of past projects? Is the project team qualified to efficiently and effectively implement the proposed project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?

**From the quality of the proposal, the proponents seem very competent. The proposed fish sampling program raises a bit of a concern regarding their abilities to perform quantitative and interpretable fish population assessments.**

8. **Cost/Benefit Comments.** Is the budget reasonable and adequate for the work proposed?

**Large cost but lots of land to buy and restore. The budget did not contain enough detail on how the monitoring was split-out. However from the descriptions, it seems that much effort will be spent on riparian vegetation - monitoring the success of reducing exotic species/weeds and success of planting trials. Little emphasis on the main objective, fish populations. Consider reordering monitoring priorities.**

**Miscellaneous comments:**

## **Prior Performance/Next Phase Funding:**

**New Proposal Number:** 179

**New Proposal Title:** Tuolumne River - Big Bend Project

1. Prior CALFED project numbers, titles, and programs: *(list only projects for which you are the contract manager)*
2. Prior CVPIA project numbers, titles, and programs: *(list only projects for which you are the contract manager)*

### **2001-H-202 Tuolumne River Watershed Outreach and Stewardship**

3. Have negotiations about contracts or contract amendments with this applicant proceeded smoothly, without persistent difficulties related to standard contract terms and conditions?

Yes -No -N/A

If no, please explain any difficulties:

4. Are the status, progress, and accomplishments of the applicant's current CALFED or CVPIA project(s) accurately stated?

-Yes No -N/A

If no, please explain any inaccuracies:

**CVPIA contract amount has been billed, and the Tuolumne River Preservation Trust has already released their first printing of the Tuolumne River Watershed Map.**

5. Is the applicant's progress towards these project(s)' milestones and outcomes to date satisfactory?

Yes -No -N/A

If no, please explain deficiencies:

6. Is the applicant's reporting, records keeping, and financial management of these projects satisfactory?

Yes -No -N/A

If no, please explain deficiencies:

7. Will the project(s) be ready for next phase funding in 2002, based on its current progress and expenditure rates?

-Yes -No N/A



If no, please explain:

Other Comments:

## **Environmental Compliance:**

**Proposal Number:** 179

**Applicant Organization:** Tuolumne River Preservation Trust

**Proposal Title:** Tuolumne River - Big Bend Project

1. Are the legal or regulatory issues that affect the proposal identified adequately in the proposal?

Yes -No

If no, please explain:

**All state and federal permits and environmental documentation will be obtained and filed.**

**\*Verify that the only local approvals needed are the Williamson Act Contract cancellation and that a rezone amendment or conditional use permit are not also needed.**

2. Does the project's timeline and budget reflect adequate planning to address legal and regulatory issues that affect the proposal?

Yes -No

If no, please explain:

**Budget and timeline to complete the permitting and environmental documentation process are adequate.**

3. Do the legal and regulatory issues that affect the proposal significantly impair the project's feasibility?

-Yes No

If yes, please explain:

**Look into any additional local approvals that may be needed for a land use change.**

Other Comments:

## **Budget:**

**Proposal Number:** 179

**Applicant Organization:** Tuolumne River Preservation Trust

**Proposal Title:** Tuolumne River - Big Bend Project

1. Does the proposal include a detailed budget for each year of requested support?

Yes -No

If no, please explain:

2. Does the proposal include a detailed budget for each task identified?

Yes -No

If no, please explain:

3. Does the proposal clearly state the type of expenses encompassed in indirect rates or overhead costs?

Yes -No

If no, please explain:

4. Are appropriate project management costs clearly identified?

Yes -No

If no, please explain:

5. Do the total funds requested (Form I, Question 17A) equal the combined total annual costs in the budget summary?

-Yes No

If no, please explain (for example, are costs to be reimbursed by cost share funds included in the budget summary).

**Funding total brought forward is \$1.00 difference.**

6. Does the budget justification adequately explain major expenses?

Yes -No

If no, please explain:

7. Are there other budget issues that warrant consideration?

-Yes No

If yes, please explain:

Other Comments: