

**Monitoring Study of Western Delta Aquatic
Habitat Restoration Sites including Twitchell
Island Restoration Site – K250/1997**

Trevor A Kennedy

Initial Selection Panel Review

Not Recommended

Amount Sought: \$411,820

Fund This Amount: \$0

Brief explanation of rating:

The proposed work would build on ongoing monitoring programs at two Delta tidal marsh habitat restoration sites (Decker Island and Kimball Island, both levee breaches to create shallow water, tidal marsh/slough habitats) and initiate a comparable monitoring program at a third habitat restoration site, Twitchell Island, where a levee set-back project has created shallow water habitat in a linear channel parallel to the main river channel. Although these types of habitat restoration efforts are a high priority activity whose objectives for improving native fish habitat and populations are important ERP and CVPIA goals (and whose efficacy remains largely unknown), the proposal is inadequate. The conceptual models and hypotheses upon which the monitoring plan is based are poorly presented and insufficiently supported, and the proposed sampling design, protocols, and analyses are insufficiently described. Based on the limited description provided, it is not likely that the proposed monitoring project would be an effective approach to provide information needed to address the important management and Delta shallow water habitat restoration design issues raised by the authors and needed by the ERP. There are also budget and contracting problems, including the fact that the Twitchell Island site for which monitoring funds are requested is not an ERP project. Based on these concerns, the Selection Panel concludes that this project should not be funded at this time.

Technical Panel Review

Technical Review Panel's Overall Evaluation Rating:

Inadequate

Explanation Of Summary Rating

The technical reviewers had difficulty in reviewing this proposal. It suffered from a lack of organization, meandering (Section 4, Previous research), and a poorly outlined sampling plan to address the hypotheses. These are considered by the technical review panel as serious technical deficiencies. Notwithstanding the positive regional review, the panel rated the proposal "inadequate" due to the technical deficiencies.

Goals And Justification

The proposal was written to formally connect two separate monitoring efforts and initiate a third that would evaluate restoration actions for native fish populations in the Delta. All three projects have restored wetland habitat on leveed islands in the delta. The goals of the restoration actions and the monitoring work to be funded are clear and consistent. Specific objectives of the monitoring wander somewhat beyond use of habitats inferred by measuring fish abundance by species (plankton, stomach contents, behavior etc. are implied in some areas; the nature of reference sites - degraded or pristine or both is uncertain).

The conceptual model that serves as the impetus for the study is clear: fish use of three restored habitat types compared to references may indicate some restoration approaches are better than others for native fish. An image of the conceptual model and hypotheses would be helpful. One external technical reviewer stated that "numerous statements were made without supporting documentation." Hypotheses did not all appear to be testable. For example on page 4, the proposal states "we

Technical Panel Review

hypothesize that the Delta native fishes are adapted to shallow water habitats of riverine shorelines and not to tidal marshes." The technical panel doubted whether the adaptation question could be answered by the monitoring approach (measuring fish abundance and conditions for each habitat).

Although the specific hypotheses for the monitoring are discussed, no clear sampling strategy is laid out so that a reviewer could evaluate its efficacy in addressing the hypotheses. Reviewers were not sure whether adding the Twitchell site, which only contains one of the three habitat types, really helped the overall study design. The other two sites contain all three habitats, so adding Twitchell begins to confound location and habitat type.

Approach

The approach of combining three big restoration project on islands with levees is a good idea. The approach of using three fish collection techniques at all three habitats at all three locations is a good idea. But it is unclear if all three techniques are appropriate for all three habitat types and it appears Twitchell Island has only one habitat type. Hence, uncertainties in the sampling design presents a serious flaw in the proposal.

The monitoring builds upon previous work, and information useful for local decision-makers may be produced from this research, but most reviewers questioned whether the results would ever be published in a peer-reviewed journal. The lack of refereed references, absence of publication record for the individuals who have worked long in this system, and the poor writing in substantial portions of the proposal (section 4, pages 7-11) support their view. Therefore, the technical review panel concludes that the project is unlikely to make significant contributions to our knowledge.

Feasibility And Likelihood Of Success

All the technical reviewers complained that the sampling design and methods are not detailed enough to properly

Technical Panel Review

evaluate this proposal. Without an explicit sampling plan, it is unclear to reviewers whether the stated hypotheses can be tested. The environmental compliance review found no problems with the project. The regional panel review found the project feasible.

Performance Measures

Performance measures were outlined, but some external technical reviewers found them lacking in substance. The external technical reviewers were split on whether the monitoring would be able to effectively evaluate the different restoration methods. One felt that a statistician should be added to the team to develop a valid sampling plan.

Products

While some external technical reviewers found that the products met a bare minimum, others found them acceptable. However, most reviewers agreed that shortcomings in project design and the lack of evidence of peer-reviewed publications from the team made it unlikely that the project will produce a peer-reviewed publication. Data production will be timely and rapid; its value is less certain.

Capabilities

For many years, the project team has led research that examines fish in the estuary. The external technical reviewers felt the sampling procedures will be conducted well by this experienced team and the project will be completed, but had less faith in their abilities to produce research that would withstand peer-review. The literature review on fish was incomplete (important and pertinent citations from Moyle's lab are omitted), leading some technical reviewers to question the applicant's knowledge of fish ecology.

Budget

If two sites are being monitored for \$50k/year each (under other funding), and the funding request only covers monitoring

Technical Panel Review

a third site and a reference area, why would the budget be over \$135k/year? The proposal suffers from a detailed sampling plan that might have been able to address this criticism.

Regional Review

The Delta regional review rated the proposal as 'very high'. They liked the proposal's goal to evaluate the effectiveness of the habitat restoration projects. They appreciated the coordination between agencies and felt the information gained would be valuable to inform and guide management. However, they noted that one of the cooperating agencies had not been contacted and had not agreed to work with the applicant. The regional review panel suggested the project be fully integrated with the existing IEP monitoring at nearby sites. The regional panel found the proposal lacked a clear description of the sampling at Twitchell Island.

Administrative Review

The budget administrative review found that the budget had insufficient detail on many aspects. The proposal and budget will need revision for the 'SOW / agreement'. The prior-phase funding review found no problems with the applicant. The environmental compliance review had no permit or feasibility concerns with this proposal.

Additional Comments

Delta Regional Review

Delta Regional Panel's Overall Ranking:

Very High

Summary:

The Regional Panel ranked this proposal Very High because of anticipated benefits to CALFED's goal of improving Delta habitats for native fish species. The creation of shallow-water tidal habitats in the Delta to benefit native species is an evolving science and this project will develop important information to help decide the most appropriate actions for future habitat restoration projects. The evaluation program will assist in acquiring knowledge to determine the extent of benefits derived from tidal wetland restoration in the Bay-Delta. Information from this project will be helpful in designing future habitat restoration in the Delta and in determining the importance of shallow-water habitats for Delta native fishes. The evaluation program will assist in acquiring knowledge to determine the extent of benefits derived from tidal wetland restoration in the Bay-Delta.

The restoration projects being evaluated were funded through CALFED levee funds and not projects funded through CALFED ERP or CVPIA. Although there is some question whether ERP should fund this proposal because the projects were initially funded by other CALFED programs, the panelists agreed that the information yielded from this project will be of very high value when considering the design and management of existing and future restoration sites.

1. Applicability To ERP Goals And Regional Priorities.

This project is intended to monitor and evaluate recent shoreline, shallow-water, tidal habitat restoration measures implemented at Twitchell Island, Decker Island, and Kimball Island in the western Delta. The restoration projects being

Delta Regional Review

evaluated were funded through the CALFED levee program and not the ERP or CVPIA. The habitat restoration measures in these areas of the Delta were planned to improve and expand habitats for high-priority fish species such as Delta smelt, splittail (both "big R" species in the Multi-Species Conservation Strategy), and to a lesser extent, Chinook salmon (also big "R"), as well as other native Delta species. The proposed monitoring project will evaluate the effectiveness of those measures in achieving their respective objectives. The project meets some of the PSP priorities, primarily through evaluation of restoration of habitat corridors in the Delta and along the San Joaquin River and creation of shallow-water habitats in the Delta for the benefit of at-risk species such as Delta smelt. Additional knowledge from this monitoring project may be acquired to determine habitat restoration strategies that may benefit at-risk species at other locations in the Delta. The evaluation project should provide useful information to determine how effective recent Delta shallow-water, tidal habitat restoration actions are in benefiting native Delta fish species.

The proposed monitoring project is designed to address several objectives of the Delta Native Fish Recovery Plan. Specifically, the proposal will: 1) Enhance and restore aquatic and wetland habitat in the Sacramento - San Joaquin River estuary by assessing the effectiveness of the restoration toward providing spawning and rearing habitat for splittail, Delta smelt, and other Delta native species, 2) Reduce effects of introduced aquatic species on Delta native fishes by assessing the potential of restored or created shallow-water habitat to favor non-native species at the expense of Delta native fishes, and 3) Assess recovery management actions and re-assess prioritization of actions by evaluating the effectiveness of restoring shallow water and tidal marsh habitat for Delta native fishes.

2. Links With Other Restoration Actions.

The project proponents plan to coordinate their monitoring program with existing monitoring programs including the Delta Resident Fish Survey, the U.S. Fish and Wildlife Service Seine

Delta Regional Review

Survey, Interagency Ecological Program (IEP) surveys, and other monitoring being conducted at specific sites in the north and central Delta. The evaluation program appears to be planned and integrated with other ongoing or future monitoring programs in the Delta. The proposed Twitchell Island monitoring site is planned to be coordinated with the IEP Resident Fish and Delta Salmon Rearing Program Work Teams. The proposed monitoring program will build upon past monitoring conducted at Decker and Kimball Islands and include new monitoring at the Twitchell Island levee setback habitat restoration site. Without this monitoring program, the effectiveness of the habitat restoration measures would not be known.

The proposed project will provide valuable information on design parameters for shallow-water habitats that would best benefit at-risk species and other native Delta fish species. The monitoring program is planned to assess shallow-water habitat restoration projects to increase our understanding of the Bay-Delta ecosystem. The needs of future restoration will be based on adaptive management learning from the success or failure of different types of restoration techniques for shoreline, shallow-water tidal habitats.

3. Local Circumstances.

There are no local circumstances that may affect the project's feasibility and there are no local constraints on the project's ability to move forward in a timely and successful manner. The project is feasible and each of the sites is appropriate. Based on their experience in performing the monitoring proposed, the project proponents have made realistic assumptions about the outcome or timing of other local projects, local natural or operation conditions, and environmental compliance and permitting activities. There are no local legal, political, or cultural impediments to the project. The project proponents have access to the evaluation sites and have the necessary state and federal monitoring and ESA permits to conduct the proposed studies.

4. Local Involvement.

The project applicants have the ability to conduct public outreach among their stakeholders and public concerning their proposed monitoring program. The monitoring team has the support of landowners from each of the habitat restoration sites.

The project team has committed to make periodic presentations to the Delta Levees Subventions Program at scheduled monthly meetings. The project team has also committed to participate in CALFED and IEP meetings and workshops that are open to the public to ensure dissemination of monitoring results. The project team will also make annual presentations to the local reclamation district and their district engineer and provide tours of the monitoring sites, as requested.

5. Local Value.

The creation of shallow-water tidal habitats in the Delta to benefit native species is an evolving science and this project will develop important information to help decide the most appropriate actions for future habitat restoration projects. The evaluation program will assist in acquiring knowledge to determine the extent of benefits derived from tidal wetland restoration in the Bay-Delta. Information from this project will be helpful in designing future habitat restoration in the Delta and in determining the importance of shallow water habitats for Delta native fishes. The evaluation program will assist in acquiring knowledge to determine the extent of benefits derived from tidal wetland restoration in the Bay-Delta. The project team has established expertise in conducting the type of monitoring proposed. Given CALFED's high-priority emphasis on restoration of shallow-water, shoreline tidal habitats in the Delta to benefit native fish species, results from the type of monitoring program in this proposal will significantly benefit future habitat restoration in the Delta by describing the success or failure of actions recently implemented.

Delta Regional Review

6. Other Comments:

A California Department of Fish and Game (DFG) member of the Review Panel noted DFG did not agree to be a co-investigator or a collaborator for this proposal, nor did they agree to provide cost share for the project. DFG will continue its monitoring activities at Decker Island.

The technical reviewers should evaluate the specific methods; it was not clear how specific monitoring at Twitchell Island was going to be conducted. The Regional Panel also emphasized that the project proponents should fully integrate existing IEP monitoring at nearby sites with the proposed monitoring program.

External Technical Review #1

Goals And Justification

The proposal identifies three specific restoration actions that will be monitored. The goals and objectives of one - the Twitchell setback - are described in the details. The proposal is less specific about the others. Similarly the conceptual model behind the setback is laid out in more detail than for the tidal marsh sites. The hypotheses behind the restoration are well laid out - whether these are hypotheses that drive the monitoring is less clear. In many instances the proposers mention 'benefit' to species or 'value' of habitats or 'importance' to species. However, the monitoring appears to address use by species rather than any of these more 'behavioral' aspects of the species-habitat associations. There is mention of measures beyond simple fish counts but no detail are given to be able to assess these approaches. Knowledge gaps are described relative to statements in previous literature and studies but given the small size of the sites and indeterminate number of samples, it is unclear how far the proposal would address these gaps, or the ambitious set of questions laid out on page 3.

Approach

If the objectives of the monitoring project, as opposed to the restoration project, is to answer the questions on page 3 then the approach is poorly laid out. The questions mention 'improvement' of habitat conditions, increase in a quantity as vague as shallow water habitat (not defined here), and the response of the western Delta ecosystem (based on localized sampling). The results of previous monitoring are described in great detail but not quantitatively (only one graph that shows 'processed' data - no tables or bar charts or error bars). As laid out here, and there appear to be no peer reviewed publications of the previous results, the information is not presented sufficiently scientifically to be of use to decision-makers.

Technical Feasibility

Surprisingly little detail is given of the sampling design and the specific use of gear types, sample site selection, or even the specifics of the 'seasonal' approach which will be used. There seems to be a disconnect between the scale of the program of monitoring and the questions posed regarding the west delta ecosystem.

Performance Measures

These are discussed very briefly and appear to have been decided already with no information on how the data collection will aid in their refinement or testing.

Products

The delivery of information from the project is dealt with in a cursory manner with mention of publication in the on-line journal and IEP newsletter. These may be adequate but the proposal does not demonstrate a clear scientific presentation of results from previous work - making this reviewer doubt the scientific credibility of future products.

Capabilities

Kitting has a record of sampling in these habitats. However no peer reviewed publications are noted from his previous work. This is surprisingly given his apparent depth of experience.

Budget

Fisheries sampling is notoriously expensive and the budget does not seem unreasonable. For 3 years of sampling, sample sorting, and the stomach contents etc. However, insufficient detail on the experimental design is really given to assess the budget relative to the field effort.

External Technical Review #2

Goals And Justification

Assessment of restored wetlands often does not include a careful analysis of the fauna, but instead only emphasizes floral recovery. As such, the proposed work would be a valuable contribution to the understanding of reconstructed wetlands. In addition, the proposed work would evaluate the efficacy of different habitat configurations in supporting native fishes. The proposal has the principal goal of monitoring "fish and wildlife use and habitat conditions..." relating to three sites (Decker, Twitchell, and Kimball Islands) in the western Sacramento-San Joaquin Delta. The Decker and Kimball Island sites are presently being monitored; Twitchell Island will be a new monitoring site. Although the goals of the project are quite worthwhile and the authors seem excited about the work, the proposal is not well organized. The sections on goals and justification are somewhat diffuse, redundant, and even contradictory. For instance, after the initial statement on page 1 that the goal is to monitor fish and wildlife, on page 2 the goal is restated to that of studying "fish habitat and fish use of Delta levee shorelines and breached islands..." Particular emphasis is given to habitats important to native fishes (Delta Smelt, Splittail, and Chinook Salmon). However, the proposed work includes more than routine monitoring of fish occurrence and habitat use as there are five very specific questions (page 3) that the principal investigators hope to answer. Even further into the proposal (page 12), the investigators first mention that they are also proposing to study zooplankton and macroinvertebrates. I think the proposal would benefit from having a section that clearly details the questions and hypotheses being addressed by the study. As presently written, these occur sporadically throughout the document making it difficult to determine the actual extent of what the investigators intend to do. The justification for the proposed work includes comments regarding the differential habitat use by fishes of high energy, vegetated littoral zones versus low energy, vegetated interior sites and the overall need to better understand the importance of tidal wetlands to native

External Technical Review #2

fishes. The investigators intend to test predictions that certain habitat types are better for native fishes and, if successful, this would provide valuable information. A problem with the justification section is that there are numerous statements of fact that are made without supporting documentation, other than the personal experience of the authors, even though there is a rich primary literature that could be drawn upon. In addition, too much use is made of technical (i.e., in house) reports and not enough of the available peer reviewed literature. Also, some text citations that likely are of peer reviewed papers are missing from the Literature Cited. Even a quick look into the peer reviewed literature (by focusing on papers from Dr. Peter Moyle's lab) has shown several papers that are quite germane to this study (e.g., Moyle et al. 2003; Sommer et al. 2001; Crain et al. 2004) that were not included. Obviously, it is always possible to find papers that could have been included, but I am bothered that the authors have not done a more thorough job in reviewing the published literature that provides an appropriate background for their proposed study. These problems aside, the major goals of the study are important and are obtainable as proposed. The justification leads to a logical need for a study of this type.

Approach

As appropriate for the diversity of aquatic habitats, multiple sampling gears will be employed in the study. However, the use of multiple gears makes comparison of habitat use within and among species challenging. It appears that catch data from different gear types will be standardized by volume of water sampled. I would like more information on how the authors intend to compare fish abundances from the different gear types within and among habitats. Because of the lack of a clear statement of the questions being addressed in the study, the approach section is difficult to evaluate. Indeed, as mentioned above, new questions are introduced in the Approach section. To determine the use of different habitats by fishes, and to determine how wetland design affects such habitat use, the authors intend to compare the study sites with reference sites. However, it is not clear how reference sites will be

External Technical Review #2

chosen and what they are intended to represent. In one instance (page 3), one gets the impression that reference sites are degraded habitats that will be used to evaluate the effects of habitat modifications. On page 6, one gets the impression that reference sites will represent "natural" conditions. It is not clear if "natural" is being used to mean habits that approach conditions present prior to the widespread modification of the Delta (it is highly doubtful that such exist) or if "natural" is being used to refer to non-improved habitats present in the area. The proposal would be strengthened by inclusion of information on basic sampling design, including the sampling units, the number of replicates, how reference and study sites will be chosen, etc. In the authors, defense, on page 14 they indicate that Task 2 will be to develop a detailed study plan that would include among other things, analytical methods, data collection, statistical analysis, and specifics about how hypotheses will be tested.

Technical Feasibility

The basic monitoring that is proposed is technically feasible and should not present any problems. The investigators already have considerable experience in working in the habitat. Indeed, the project would bring together an impressive team of state and academic biologists. It is more difficult to evaluate the feasibility of answering some of the other questions that are mentioned at various times in the proposal. For instance, without knowing such things as how reference sites are chosen, what constitutes the sampling unit, and the number of replicates that will be used, it is difficult to determine whether the objective (p. 14) of comparing "... species composition among sites by sampling gear, season, and habitat type" is obtainable in a rigorous fashion.

Performance Measures

The data collected in the study ought to provide information on the impact of different restoration actions. Of concern is how conclusive this information will be (see previous sections).

Products

The study has the potential to provide useful information to other groups. Data will be collected and compiled in a standardized manner and should be readily available for others to use. The problems with sampling design discussed above make it more problematic to state whether the work would produce results that would stand up under rigorous peer-review.

Capabilities

The team that would undertake this project has an impressive amount of experience in terms of the field work. Perhaps inclusion or consultation with someone versed more in statistics and sampling design would be helpful to strengthen the study.

Budget

The budget seems appropriate for the work being proposed.

Additional Comments

On the positive side, the proposed work addresses a real need and the team that would do the work has excellent prior experience with the field component of the work. In addition, there seems to be a real excitement for doing the work. On the negative side, the proposal suffers from weak organization and the lack of clear statements of research questions, sampling design, and data analysis.

External Technical Review #3

Goals And Justification

YES. THE MODEL IS LARGELY ONE OF UNTESTED HYPOTHESES AND ASSUMPTIONS THAT ARE BADLY IN NEED OF INVESTIGATION.

W.R.T. HYPOTHESES: A MAJOR HYPOTHESIS TO BE TESTED IS THAT NATIVE FISH COMMUNITIES WILL CHANGE SEASONALLY AT ALL THREE SITES, WITH CHINOOK FRY DOMINATING IN WINTER AND EARLY SPRING AND NATIVES PREVAILING DURING CERTAIN TIMES. "NON-NATIVES WILL ALSO BE SEASONALLY ABUNDANT". I GUESS THAT'S AN HYPOTHESIS.

Approach

Is the approach well-designed and appropriate? YES; FAIRLY STRAIGHTFORWARD SAMPLING METHODOLOGY AND SCHEDULE.

Will monitoring and evaluation activities make significant contributions? YES; PLEASE SEE GENERAL COMMENTS BELOW

Technical Feasibility

TECHNICALLY FEASIBLE YES; FULL DOCUMENTATION IS LACKING. SCALE IS CONSISTENT WITH OBJECTIVES

Performance Measures

Will the data allow evaluation of the restoration actions PROBABLY

Are specific performance measures proposed NOT CLEAR

Is the rationale for the performance measures clearly demonstrated? YES

Will these data and performance measures allow evaluation of the conceptual models underlying the previous restoration actions? YES IF SUFFICIENTLY QUANTIFIED.

External Technical Review #3

Is the monitoring and evaluation plan explicit and detailed enough to assess the performance of the restoration actions?

YES

Products

The investigators have not published anything subjected to critical review or containing data that can be evaluated. However, they are to be commended for having undertaken the effort to assess the effectiveness of the restoration work to date. The investigators have an impressive record of involvement in Delta and regional environmental issues. However, from the literature cited section, minimal evidence of rigorous science is presented. The lead P.I. has no reviewed publications cited and is second author on two internal reports. The two other co-Pis have produced only abstracts (Rockriver as a DFG employee can be exempted from this criticism, although many DFG personnel publish in the primary literature). Perhaps if I had brief CVs in hand I would feel differently. The qualitative nature of the background findings presented in the proposal do little to allay concerns in this matter.

Capabilities

lack of previous reviewable products makes it hard to evaluate team's qualifications.

the mix of expertise is apparently appropriate.

W.r.t. performance record indicating ability to complete the project: NOT BY THE STANDARDS OF PEER-REVIEWED SCIENCE, BUT APPARENTLY IF IN-HOUSE AND REGIONAL REPORTING IS AN ACCEPTED STANDARD.

Budget

Wildlands funded two years of monitoring by FFC and CSU Hayward at Kimball Island. DFG has conducted monitoring at Decker Island for two years. Both the Kimball and Decker studies are partially funded for at least the next year.

External Technical Review #3

Wildlands and DFG each contribute \$50,000 annually to the study of Kimball and Decker islands, respectively." (ARE THESE EFFORTS INSUFFICIENT?) The two ongoing studies are funded at a level of \$100,000/yr; presumably a third study would require an additional \$50,000. Ignoring matches and in-kind contributions, this background implies that the 3 sites need about 150K/year. The current proposal requests \$411K for three years, which is in the ballpark of the current work.

Additional Comments

The investigators are proposing to continue studying impacts on habitats and fishes of recent tidal marsh restoration/levee mitigation projects (breached islands and conversion to tidal marshes at Kimball and Decker), including a new approach at Twitchell (linear riparian/wetland habitat creation). They will accomplish this by evaluating different fish habitat restoration approaches in the Delta and by determining whether existing restoration actions are attaining their objectives. Their major goal (or "hope" as stated repeatedly) is to identify habitat features that appear to favor native species over non-natives as a means of guiding future restoration efforts. The proposed work would fill in a major gap in knowledge of the Delta system, namely understanding the importance of tidal wetlands and their restoration to the fishes of the San Francisco Estuary.

My strongest criticism of this proposal is not so much of what the investigators are proposing to do but of the circumstances that appear to have necessitated their work. An apparent goal of the existing and planned restoration efforts has been to provide habitat for spawning and rearing native fishes". It sounds however like the personnel in charge of designing these restoration projects are still searching for one that works but are still failing to assess designs already in place as well as ("improved"?) approaches being implemented and planned.

Basically, (1) restoration is ongoing along levees but without adequate assessment of its effectiveness; and (2) new designs are being implemented based on untested assumptions (e.g.,

External Technical Review #3

presumed spawning locales of Delta smelt) without knowing if old designs have failed (beyond anecdotal observations of invasive plants and non-native fish densities), and again without planned assessment of the effectiveness of the new approaches. I lack essential background information on the process and agencies that created the original restoration efforts. Where did the money come from, how much was allocated by whom, where was the adaptive management component in this work that is (finally?) proposed here? It appears that this proposal is basically an effort at correcting a major, continuing oversight in the original restoration effort that did not include sufficient post-restoration monitoring.

A major strength of this proposal is the proposed partnering of academic, NGO, and governmental agency efforts. The investigators state that each of the three parties have been studying Delta fishes over the past several years and hope by teaming together they can better answer questions about the importance of shallow water shoreline habitats in the Delta, and plans to restore these habitats. We unfortunately have only the investigators' word as evidence of their ability to complete these tasks. No real data are presented and no publications have been produced to attest to the quality of the ongoing efforts. Background data as presented are almost entirely qualitative and anecdotal. The investigators "hypothesize that invasive species may be less adapted to . . . seasonal variability." This idea is well-established in the invasive species literature, especially for California. P. B. Moyle and colleagues have published extensively on factors that influence invasibility, with seasonal variation a driving variable discouraging establishment of non-indigenous species. None of these papers are cited in the Literature section, although a Moyle et al. (2001) paper is mentioned in the text but does not appear in the Literature section so I can't be sure if they are reading relevant and important primary literature.

I truly hope the investigators will be held to their stated intent (Task 7. Expected Outcomes and Products) to prepare their final report "as [sic] paper for peer review for submittal to the Bay-Delta Online Science Journal or other

External Technical Review #3

peer review [sic] science journal." I would hope they would go beyond the local venue. This has been a major shortcoming of work in the Delta in the past and it is apparent these investigators place weak emphasis on the importance of publication given the two typos in the above sentence as compared to rather careful proofreading throughout most of the proposal. The investigators need to better appreciate the value of publication beyond generating reports and participating in local conferences. Such dissemination and national involvement would subject their work to a level of scrutiny necessary to truly demonstrate its validity and, equally importantly, make their findings available to the larger scientific and conservation communities.

My final assessment of this proposal is that it is commendable in what it seeks to do, although much of this should have been incorporated into the original design of the restoration effort. The investigators appear to be qualified to complete the work but have not given a great deal of evidence to support their qualifications.

Budget Review

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

Yes.

If no, please explain:

Comments: 1. Need add'l detailed info 2. 8% of budget is for project mgmt 3. 45% of budget is for subcontractors 4. IDC rate is 10% 5. Supplies & Expendables as well as equipment is charged IDC

Budget Detail/Administrative Overhead Fees - Budget detail combines the labor rates with the direct overhead rate. The labor rate, benefits and indirect rate should be itemized in the format provided by the PSP to enable reviewers to better evaluate and ensure that proposed labor rates are comparable to state rates.

If proposal is funded, a detailed list of items included in the indirect cost rate should be provided by the grantee. Grantee must provide itemized and detailed information included and charged as part of Indirect Rates (IDC) charges.

Note: No overhead or indirect rate charges on the equipment purchases should be allowed as part of the budget that shall be funded as a result of this PSP.

The Grantee should charge a reduced indirect cost rate to the state for services that will be subcontracted by the grantee. (Researching SCM Section 3.06 B).

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

Yes.

If no, please explain:

Comments: 1. Need add'l info - NEED CAREFUL REVIEW BEFORE AWARDED 2. Rates/labor, etc. are rolled up, mark up can't be identified 3. Ensure supplies & expendables are not double charged w/ OH & IDC 4. Budget includes average of 10%

Budget Review

escalation charge COLA for each for supplies & expendables

Task and Deliverables - Grantee must provide detailed information for all work including subcontractor work for each specific task, services, and work to be performed with the appropriate and corresponding deliverable or end product for each task(s) and/or sub-task(s). Costs associated with each task and deliverable should be evaluated based on what is considered to be reasonable costs for performing similar services.

Subcontracting - Proposals for work to be performed by subcontractors or other entities in excess of the 25% of the total project dollars the grantee is required to provide a justification for subcontracting services. If subcontractors are pre-selected and identified in the proposals as part of the project team, the grantee should provide a justification on how each subcontractor was selected. Grantee shall identify labor rates and indirect costs rates paid to each identified subcontractor to ensure that labor rates are comparable to State rates.

The Subcontracted work should be identified with a rate and hours and attributed to each task and deliverable for each year. A performance evaluation is also recommended for subcontractors that receive more than 50% of the grant funds. If the subcontractor has not been identified, a position description complete with education level, experience, and abilities be submitted and the rate and hour associated with that position will be attributed to a task, and deliverable. The grantee must also comply with the State competitive bidding process as stated in the PSP.

3. Are project management expenses appropriately budgeted?

No.

If no, please explain

Comments: 1. 8% is budgeted for proj mgmt - ensure applicant is fully engaged & participating in the project & that proj mgmt is not performed solely by subs

Budget Review

Task and Deliverables - Grantee must provide detailed information for all work including subcontractor work for each specific task, services, and work to be performed with the appropriate and corresponding deliverable or end product for each task(s) and/or sub-task(s). Costs associated with each task and deliverable should be evaluated based on what is considered to be reasonable costs for performing similar services.

Subcontracting - Proposals for work to be performed by subcontractors or other entities in excess of the 25% of the total project dollars the grantee is required to provide a justification for subcontracting services. If subcontractors are pre-selected and identified in the proposals as part of the project team, the grantee should provide a justification on how each subcontractor was selected. Grantee shall identify labor rates and indirect costs rates paid to each identified subcontractor to ensure that labor rates are comparable to State rates.

The Subcontracted work should be identified with a rate and hours and attributed to each task and deliverable for each year. A performance evaluation is also recommended for subcontractors that receive more than 50% of the grant funds. If the subcontractor has not been identified, a position description complete with education level, experience, and abilities be submitted and the rate and hour associated with that position will be attributed to a task, and deliverable. The grantee must also comply with the State competitive bidding process as stated in the PSP.

4. Does the proposal clearly state the type of expenses encompassed in indirect rates or overhead costs? Are indirect rates, if used, appropriately applied?

No.

If no, please explain

Comments: 1. 10% IDC is identified for applicant but not for subs 2. IDC is charged for equipment, supplies & expendables - ensure that charges are not duplicated in the OH/IDC

Budget Review

Budget Detail/Administrative Overhead Fees - Budget detail combines the labor rates with the direct overhead rate. The labor rate, benefits and indirect rate should be itemized in the format provided by the PSP to enable reviewers to better evaluate and ensure that proposed labor rates are comparable to state rates.

If proposal is funded, a detailed list of items included in the indirect cost rate should be provided by the grantee. Grantee must provide itemized and detailed information included and charged as part of Indirect Rates (IDC) charges.

Note: No overhead or indirect rate charges on the equipment purchases should be allowed as part of the budget that shall be funded as a result of this PSP.

The Grantee should charge a reduced indirect cost rate to the state for services that will be subcontracted by the grantee. (Researching SCM Section 3.06 B).

5. Does the budget justification adequately explain major expenses? Are the labor rates and other charges proposed reasonable in relation to current state rates?

No.

If no, please explain:

Comments: 1. Labor charges are rolled up - need detailed info
2. Budget not clear if all labor categories are identified in proposed work (e.g., adm staff, etc.)

Budget Detail/Administrative Overhead Fees - Budget detail combines the labor rates with the direct overhead rate. The labor rate, benefits and indirect rate should be itemized in the format provided by the PSP to enable reviewers to better evaluate and ensure that proposed labor rates are comparable to state rates.

Major Expenses - If the grant is awarded a detailed list of equipment purchases should be provided by the grantee so reviewers can better evaluate whether it is more cost effective for the state to purchase large dollar equipment

Budget Review

items through the state procurement process. If the equipment list is available within the State inventory or stock, then purchase of some or all of the listed items may be provided, loaned, or leased by the state to the grantee. In the event, that the equipment is purchased by the grantee, the grantee shall maintain an inventory of major equipment for auditing purposes and potential use for future projects. Grantee shall follow State Contracting Manual [SCM] Section 7.61 thru 7.62 rules pertinent to equipment purchase, lease, etc.

6. Are other agencies contributing or likely to contribute a share of the projects costs?
Yes.

If yes, when sufficient information is available, please sum the amount of matching funds likely to be provided:

Comments: 1. Per proposal DWR &DFG are working on some aspects of the project &are willing to adjust their studies scopes to be compatible with this proposal. 2. Ensure that proposed cost share funds are available - considering delays.

Cost Sharing - Grantee shall provide information regarding its financial capability and stability as well as it's level of commitment for any proposed cost share funds. A detailed budget of the project's proposed cost share funds should be provided prior to grant funds being awarded. A financial evaluation is recommended for grant agreements that state/claim over 30 % or \$250,000 (which ever is less) of matching funds. The evaluation will avoid likelihood of the grantee requesting an amendment to increase project funding due to lack of or miscalculation of matching funds to complete the project.

7. Does the applicant take exception to the standard grant agreement's terms and conditions?
If yes, are the approaches the applicant proposes to address these issues a reasonable starting point for negotiating a grant agreement?
No.

If no, please explain:

No info provided on this.

Budget Review

8. Are there other budget issues that warrant consideration?

Yes.

If yes, please explain:

1.NEED CAREFUL REVIEW OF BUDGET PRIOR TO AWARD. 2. Ensure cost share, SOW, &Budget match &reasonable for work proposed.

Other comments:

Supplemental Comments: 1. Proposal is not clear whether subs have been identified (except for Dr. Kitting) 2. Proposal &budget will need MAJOR re-work to converted to SOW/Agreement 3. Need Scope &deliverables to be provided in more detail 4. Recommend review financial capacity to complete/perform work/cash flow issues 5. Recommend verify whether applicant willing to accept T

END OF REVIEW

Environmental Compliance Review

1. Is compliance with California Environmental Quality Act (CEQA) required for this project?

No.

2. Is compliance with National Environmental Policy Act (NEPA) required for this project?

No.

3. Does this project qualify for an Exemption or Exclusion under CEQA and NEPA, respectively?

Does not apply.

4. Did the applicant correctly identify if CEQA/NEPA compliance was required?

Yes.

5. Did the applicant correctly identify the correct CEQA/NEPA document required for the project?

Does not apply.

6. Has the CEQA/NEPA document been completed?

Does not apply.

7. If the document has not been completed, did the applicant allot enough time to complete the document before the project start date?

Does not apply.

8. If the document has not been completed, did the applicant allot enough funds to complete it?

Does not apply.

9. Did the applicant adequately identify other legal or regulatory compliance issues (Incidental Take permits, Scientific Collecting permits, etc.) that may affect the project?

Yes.

Comments:

The applicant has obtained a Scientific Collecting Permit and ESA Section 10 permit. The applicant did not check-off a Section 10 permit as being necessary or obtained on the Environmental Compliance Worksheet, however, it is indicated

Environmental Compliance Review

on page 11 of the proposal description.

10. Does the proposal include written permission from the owners of any private property on which project activities are proposed or, if specific locations for project activities are not yet determined, is it likely that permission for access can be obtained?

Yes.

Comments:

The applicant has obtained permission from DWR and Wildlands, Inc. to access their property. Copies of the permission letters are not included in the proposal.

11. Do any of these issues affect the project's feasibility due to significant deficiencies in planning and/or budgeting for legal and regulatory compliance or access to property?

No.

Prior-Phase Funding Review

List the other CALFED or CVPIA grants received by this applicant for which your agency manages contracts:

Project Title	Flow Requirements for Salmon Passage in the Cosumnes River
CALFED Contract Management Agency	AFRP
Amount Funded	99460
Date Awarded	2003/01/01
Project Number	11332-3-J008
Project Title	Cosumnes River Salmonid Passage Improvement Project
CALFED Contract Management Agency	USBR/AFRP
Amount Funded	376510
Date Awarded	1998/01/01
Project Number	1425-99-FC-20-0027

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

Yes.

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

Yes.

5. Has this organization made adequate progress towards these project(s)' milestones and outcomes, without unreasonable divergences from project schedules or poor-quality deliverables?

Yes.

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

Yes.

Prior-Phase Funding Review

7. If this application is for a next phase of a project whose contract your agency currently manages, will the project(s) be ready for next-phase funding to monitor and evaluate project outcomes in fiscal year 2005/6, based on its current progress and expenditure rates?

Yes.