

Monitoring Ecosystem Response and Restoration Implementation in Western Sacramento Valley Watersheds

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Technical Panel Review

Technical Review Panel's Overall Evaluation Rating:

Inadequate

Explanation Of Summary Rating

The technical panel rated this project as inadequate for several reasons. The soil study did not make adequate links to water quality. Regional reviewers found that the project did not address the recovery of species of concern. Although many of the tasks are likely to be informative and productive, as presented the project lacks cohesion.

Goals And Justification

The goals of this project are to assess the performance of several grassland or rangeland restorations in uplands of several Bay-Delta watersheds at the local and landscape level, to develop indicators of success at the ecosystem level, to continue monitoring and implementation of adaptive management, and to initiate studies of invasive weed dynamics and ecosystem effects of weeds. Justifications include the issue that continued loss of native grasslands leads to erosion, poor water quality and loss of infiltration to groundwater, that invasions of exotic species reduce rangeland and wildlife values, and that there is need to scientifically assess restoration techniques in grassland areas.

Most reviewers saw the need to address rangeland and grassland restorations in the uplands and headwaters of priority waterways. Some were impressed with the scientific justifications for this body of work. There were, however, questions as to whether the individual projects were cohesive and whether this grant would unify them.

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In general, reviewers liked the idea of including ecosystem processes. However, none of the methods presented directly linked measures of soil properties to water quality. This linkage was the justification for a major component of the project.

One external reviewer and a regional review questioned whether this project is relevant to CALFED goals; the project did not explicitly describe monitoring of species of concern other than grassland birds in general.

Most reviewers agreed that the remote sensing data would be quite useful to landowners in the region, if made accessible.

Approach

The soil study did not have an adequate approach for its stated main goal (assessing restoration effects on water quality). Other project tasks seemed well-designed, and the work builds on existing CALFED projects. Reviewers liked the idea that restoration techniques might correspond among the various sites (e.g. grazing and burning treatments), providing the opportunity to determine how well results generalize across the geographic area. However, in the body of the grant it was unclear how much commonality in restoration methods there would be among sites.

Two reviewers (one external, one technical panel) were pleased with the conceptual model linking local and ecosystem processes, but others did not think that the soil measures qualified as an ecosystem study.

This project had a particularly well-developed outreach component.

Feasibility And Likelihood Of Success

Many of the tasks have proven to be feasible and productive in prior funding phases. Documentation of techniques was better in this proposal than in some others. However, in the body of the grant, the scope of the work was sometimes unclear for

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individual tasks. Which tasks would be performed at all sites, versus solely at Willow Slough or another single area?

The grant was unwieldy. Crucial details of experimental design, sampling and local site selection were buried in a series of appendices, which hampered reviewers' ability to determine feasibility.

Although the project stressed water quality as a justification, there were no direct measurements of water quality. The feasibility of assessing likely impacts on water quality is doubtful with the methods presented here.

Performance Measures

Performance measures were refreshingly quantitative in some sections of this proposal, with goals such as removing certain percentages of invasives. Linkages between site-scale processes and remote sensing were well developed.

As stated above, performance measures for water quality were inadequate.

Performance measures for invasives, short-term impacts of restoration techniques and outreach are appropriate. These tasks are likely to be productive.

Products

Products will include high-quality scientific publications, a very useful remote-sensing database for this area with potential applications to similar habitats, information dissemination to a wide variety of stakeholders, and increased local involvement. Some project results should be immediately useful to local landowners. The outreach component is well-developed and local involvement is likely to be sustained and enhanced.

The data management plan lacks a data access policy, data and metadata standards, and a central database and portal.

Capabilities

The project brings together an impressive team of scientists, with proven records of productivity on the current projects as well as in their other work. Audubon has proven a capable coordinator and manager for the research team.

Budget

The budget seems fine given the scope of the work, although allocations for some tasks are vague. See 'administrative' below.

Regional Review

There were two regional reviews, one ranking this project as low, the other as medium. The project encompasses a large number of restorations that affect a variety of stakeholders. However, it is uneven in addressing priority areas: regional reviewers agreed that it is likely to be useful for testing effects of restorations on rangeland and riparian zone vegetation, but pointed out that little attention is paid to 'big R' species. Response variables are only indirectly relevant to wildlife values and water quality. Methods could be employed more consistently among sites (e.g. GIS is missing for Lassen Foothills).

The plans for data centralization are good but a regional reviewer questioned whether data would be accessible to non-CALFED researchers.

One regional review stated that the Jepson Prairie site is not a priority area. A technical panel reviewer noted that Jepson Prairie is connected by sloughs in the prairie connect to Delta waterways, and many rare plant species are crowded by exotics in this area.

Both regional panels pointed out that the project will not monitor species of concern. Birds will be monitored but there was little indication that particular species of concern would be addressed.

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The project will be immediately useful for some management decisions (e.g. whether to use seeds or plants in restorations). The regional value of other tasks is unclear (soil cover analysis, relation of soil nutrients to water quality, 'flyover' capability in GIS mapping). Some of the latter have high costs.

Administrative Review

No issues were raised for environmental compliance or prior phase funding. The budget reviewer requested information on labor rates and asked why there was an apparently higher calculation of benefits and indirect than stated rates. The base for indirect was unclear and project management rate appeared higher than stated. Cost sharing is high so the project needs assurance of the level of commitment for these funds. The direct cost of student fees needs clarification. Subcontracting needs to be justified and reviewed to ensure compliance with labor and indirect rates.

Additional Comments

Bay Regional Review

Bay Regional Panel's Overall Ranking:

Low

Summary:

The project appears to be a conglomeration of studies at three sites in the Sacramento Valley rather than an integrated and focused investigation. The relationship between the three project sites is unclear, why were the sites chosen? It also is not clear how the data and results from the project will be made available to interested parties.

1. Applicability To ERP Goals And Regional Priorities.

It is not clear how this project will meet PSP's priorities, or assist in monitoring and evaluating CALFED ERP or CVPIA restoration activities. The Jepson Prairie is not a high priority area. This project does not monitor recovery of the Prairie's major species, like the threatened delta green ground beetle, but instead tracks the spread of weedy plants.

2. Links With Other Restoration Actions.

This project likely will provide useful information relating to the effects of livestock grazing on restoration of grasslands and riparian areas.

3. Local Circumstances.

It appears the project is feasible.

Bay Regional Review

4. Local Involvement.

According to the application, there are a number of cost-share parties. These organizations and agencies likely are a more appropriate source of funding than CALFED.

5. Local Value.

Due To The Project's Emphasis On Satellite Photos (GIS) At Willow Slough And Jepson Prairie, But Apparently Not Lassen Foothills, And The Focus On Plant Studies, It Is Not Clear That This Project Will Provide Insight Into The Effectiveness Of Livestock Grazing And Controlled Burning For The Restoration Of Grasslands And Riparian Ecosystems.

6. Other Comments:

The Project Focuses On Plant Monitoring, Although One Of The Studies Would Monitor Birds. Given The Current Interest In The Effects Of Livestock Grazing On Wildlife, Additional Studies On Mammals, Reptiles, Amphibians, Fishes, And Invertebrates (Especially Butterflies) Or The Threatened Delta Green Gound Beetle At Jepson Prairie Would Be Appropriate.

Sacramento Regional Review

Sacramento Regional Panel's Overall Ranking:

Medium

Summary:

The proposal meets many of the criteria. The regional value is relatively high from the more minor aspects, such as evaluating cost-effectiveness and effects of education-based restoration. However, the value of primary tasks (monitorily) is less clear. For example, the proposal states the soil cover information has been useful to landowners but does not explain how.

The proposal seems to be a grab bag of somewhat un-related studies. The justification of including the Lassen Foothills is unclear.

1. Applicability To ERP Goals And Regional Priorities.

The project monitors ecosystem stressors, such as water quality (indirectly through soil cover information) and weeds, in relation to grassland restoration; it evaluates restoration/management techniques and information generated could lead to adjustments in restoration actions.

The project would monitor multiple ERP restoration projects carried out by a variety of organizations, including 20 projects over 15 sites. It would not evaluate effects to any Big R species.

Information obtained could be applicable to high priority ecosystems. The project would assess riparian restoration, which is important and common in the Sacramento Valley region.

2. Links With Other Restoration Actions.

The project is indirectly linked to restoration other than that it specifically monitors because information generated would be applicable to other projects, particularly those within the same watersheds.

The project monitors several related restoration actions, including different grassland restoration and management techniques, at multiple sites. It is coordinated with multiple restoration programs being implemented by various stakeholders and collaborators.

The project will store data in a manner that could be used by people involved in related restoration activities, and there is specific mention under some tasks that data will be made readily accessible to CALFED and other CALFED researchers. Data from Task 2 would be incorporated into existing website accessible to anyone. However there is no indication that data from different tasks would be consolidated and made readily accessible to non-CALFED researchers.

The project continues and expands upon previously CALFED-funded monitoring projects and contributes to a longer-term data set. It will specifically evaluate long-term costs of restoration activities.

The proposal does not identify specific data gaps that would be filled, though it is designed to answer questions that have arisen from previous monitoring and would build a watershed-wide monitoring system. Some of the specific questions could provide information on areas of limited research, such as long-term costs and effectiveness of seeding vs. container planting.

Specific projects that would benefit are not identified, though information provided by the proposed project could be very useful in planning and design of other restoration actions. Proposed monitoring methods and actions could be used to assess other restoration actions in the region.

3. Local Circumstances.

There are no apparent local circumstances that could affect the project's feasibility. It is an extension of existing monitoring and should be able to continue in a timely and successful manner. No permits are necessary for implementation. Access to private property is required, but letters of support and permission from collaborators and property owners/managers are included.

4. Local Involvement.

The project includes local involvement on several different levels. It incorporates local landowners into the implementation of the project as collaborators. Specifically, Task 2 includes a web tool that can be utilized by any interested parties and Task 5 would include training workshops and field days for landowners owners/managers and resource agencies.

The project involves multiple local institutions, including UCD researchers, Solano Land Trust, and Center for Land Based Learning, all of which are active in restoration in the region. It also involves TNC which is responsible for managing land in the region. It does not, however, specifically involve public agency land managers.

The project is largely built on a wide variety of existing local partnerships that would be further strengthened by this project, increasing the potential to attract future funding from multiple sources.

5. Local Value.

The project will investigate how multiple restoration and management actions effect ecosystem processes. Riparian restoration monitoring will include cost-benefit analysis, evaluate advantages of seeding vs. container stock, and provide additional information on success of different restoration techniques.

Sacramento Regional Review

This will increase understanding of restoration actions and allow for more informed management decisions and provide insight into potential adjustments to improve effectiveness. Information generated will be useful at various scales, because the project combines project-level and landscape-level monitoring and analysis to evaluate overall watershed health.

The regional value of Tasks 2 and 3 is unclear, including expanding the remote-sensing soil cover information, adding 3D flyover capability to the web tool, and evaluating potential for improving water quality. This is particularly true given that the majority of costs are associated with these tasks.

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Goals And Justification

Technical Review of "Monitoring Ecosystem Response and Restoration Implementation"

Overall, I have four general conclusions - three that relate to the proposal at hand, one that relates to the much larger CALFED program. My responses below touch on and expand upon these conclusions. First, monitoring is a necessary part of an ecosystem restoration process. Well-designed monitoring programs are critical to spending resources wisely. Second, monitoring ecosystem responses to treatments must occur over time lines far longer than three years. This proposal can only be viewed at best as the beginning of a long-term monitoring program. Whether the at-hand proposal is the right approach remains to be evaluated against others - if it is approved in this round. Third, this proposal appears more as a series of unrelated or marginally-related monitoring programs, rather than a robust and comprehensive approach to understanding dynamics and responsiveness by different ecosystems to various treatments. This may be fine and successful, but appears to be the case nevertheless. Fourth is a question, and it is related to the much larger CALFED program - is this the most cost-effective way to spend these considerable resources in order to achieve programs goals? Where are the greatest sources of problems within the ecosystem, and what are the best (and least-cost) ways to address them? I have concerns that these resources will be - over time - spent in a way that generates a tremendous amount of very good scientific information, achieves some laudable and beneficial goals, but nevertheless fails to solve the considerable problems facing the California Bay Delta and its many communities.

Goals and Justification:

The overarching goal is monitoring the effect of restoration efforts in the Sacramento basin uplands. Monitoring the outcome or effectiveness of actions is critical and often underfunded and underappreciated. I think that it is excellent

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that CALFED is seeking monitoring proposals to presumably fund in order to understand if money on restoration efforts is being well-spent.

This proposal seeks to monitor the impact and effectiveness of a number of completed and ongoing projects, by examining invasives and native plants and grasses, avian populations, soil and water analyses, planting techniques, education and cost assessments. To varying degrees, all these areas are important by themselves and also serve as indicators of the condition and trends within the larger ecosystem. Education and public awareness are important to building and maintaining the political will to support restoration activities over the long-term - and thus linked to the prospects of restoring ecosystem health over time.

This proposal is detailed, and given its breadth, it needs to be. There are number of very distinct projects included. They seem connected only by the monitoring program that is consistent throughout the proposal.

Approach

Generally, the approach makes good sense with one important question (applicability) and one important exception (timeline). It is good to see that the proposal seeks to build on existing CALFED-related projects - whether they are restoration projects themselves or increased or continued monitoring. Water quality, plant communities, bird communities, public education, the efficacy of restoration techniques - all reflect different aspects of how we achieve a healthy, restored ecosystem.

Question of Applicability: The study designs are site-specific and a question arises - how applicable will this work be to the rest of the landscapes targeted by the CALFED project? Given my background and expertise, I am not in a position to answer this question. My knowledge of the features of the entire landscape under scrutiny is limited. Ideally, however, the results would be applicable to a significant proportion of lands and waters, and thus provide valuable lessons for

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restoration elsewhere within the basin. This is an important question that deserves further exploration by qualified individuals.

Timeline: My biggest concern has to do with the monitoring timelines. To different degrees depending on the specific subproject, the three-year timeline is far too short to provide meaningful reliable information that might be applied elsewhere in the basin. Effective monitoring must occur over much longer timelines - especially if one is seeking to understand restoration processes on large landscapes. Little can be learned about avian populations - much less trends or population responses to restoration activities in three years. Other factors - offspring recruitment, food supply, disease cycles, climatic conditions - can all greatly influence bird populations on several year increments - and thus totally mask or heavily skew monitoring results. The fact the birds are highly mobile, for example, further undermines monitoring on this timescale.

Establishing a Baseline: Monitoring on this timescale should be viewed best as serving towards the establishment of a baseline against which subsequent monitoring can be compared. If these projects are well executed, the resulting data will be useful to decisionmakers, but more importantly over the next few years, it will begin to establish a useful reservoir of region-based knowledge about water, soil, plant and animal resources and lifecycles and their responses to and interactions with restoration techniques and landscape conditions.

While I think that the bird surveys provides the best example, all the other projects - water quality, invasives, planting recruitment, and public outreach - would benefit from longer timelines. Given the expansive and long-term nature (and budget limitations) of the CALFED project, more robust and long-term monitoring is needed. I think that over time, CALFED should deeply explore this question of monitoring and develop a strategic, comprehensive approach that focuses on key indicators like water quality or indicator species - both aquatic and terrestrial - that may reflect on larger trends

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across the ecosystem and provide some greater indication of the ecosystem's health as it guides resource management decisions.

Technical Feasibility

The above timeline concerns link to this category as well. I will not repeat these concerns here. I think that the projects are technically feasible as planned. The projects are well documented and well supported by diverse expertise. If properly executed, I believe that the projects will yield useful data that can BEGIN to inform decisionmakers and BEGIN to provide information about the efficacy of the restoration activities that have occurred or are continuing to occur at the various sites.

Performance Measures

I think generally that the data collected will allow the evaluation of the restoration actions being monitored. Once again, the short timeline is a weakness in the design, particularly for the water quality and bird population analyses. Water Quality: It is my understanding that the water quality analyses are intended to explore the effects, if any, of vegetation treatments. Once again, the short-time frame undermines our ability to understand the dynamics at work for two reasons. One, the climatic conditions - amount and timing of the rainfall can impact mobility of nutrients in the soil. A longer timeframe would allow for the opportunity to limit or assess the impacts of these types of variables. Two, vegetation treatments, particularly if they are successful over time in establishing a new, more desired plant community will have an impact on the soil that changes over time - because the plant community will over time become more and more established and it will also over time very likely alter soil properties - like pH, nutrient ratios and mobility. These variables and changes will not be well measured over a short time frame. Bird Populations: Long-term bird surveys in a landscape are a critical tool in assessing trends over time. In the study at hand, I would view any conclusions about the bird counts as they may relate to restoration activities with

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a high degree skepticism. Other larger landscape forces and climatic conditions - or events or activities in distant habitats may have a determinative effect on populations or the presence/absence of species, without our knowledge. Many migratory bird populations in a given location can vary widely on a year-to-year basis. While there may be some exceptions, it is only over time that one can get a really meaningful picture of many bird populations and how they may be present and interacting with a landscape.

There is a much stronger case for the reliability and usefulness of the performance measures associated with invasives, with restoration techniques, and with outreach work. The nature of the subjects (like non-migratory plants) and the data collection measures (plant survival, plot analyses) allows for a higher degree of confidence in the results based on the time frame.

Products

The anticipated products will be useful and informative to the long-term goals of the larger CALFED project. The GIS work and the studies that will emerge should be useful to CALFED and more broadly to restoration work of this kind. The report repeatedly references report production, conferences, and information dissemination. There is a strong awareness of connecting these projects to the larger CALFED landscape and restoration projects. This is important.

Capabilities

The proposal has assembled a diverse and impressive set of individuals - many of whom have a proven commitment and track record performing previous work upon which the current proposal is based. Academics have background, experience, and expertise. The proposal is also supported by a range of other important actors as well - landowners, farmers, ranchers, conservation districts, etc. Audubon has done an impressive job of assembling and coordinating this diverse team.

Budget

The budget seems thrifty, but do-able: averaging about \$400,000 per year over three years. Given the multiple projects, different actors, products, and the geography, \$1.2 million is not an excessive amount of money. If the teams operate effectively together, I think that it should be achievable. Looking over the various categories, I do not see anything out of the ordinary.

Additional Comments

Two final comments - one to the proposal, the other more generally.

(1) This proposal is simply too long and difficult to follow. A Table of Contents for the 100+ pages would have been helpful. The team should have done a better job to summarize and tighten up the presentation. I think that it is not reasonable to ask reviewers to provide feedback on the this type of lengthy proposal. The result will either be a review-well-done, accompanied by a high burnout rate, or superficial or partial analyses due time constraints.

(2) I want to take a few minutes to discuss some concerns that were raised by this proposal, but not related to it. These should not be construed in any way as a criticism or weakness of the proposal at hand. These concerns have to do with the priorities and goals over time of the CALFED project.

At the start, I will clearly state that my knowledge of the CALFED project is limited. I haven't lived in Northern California since the late 1980's. I do, however, have fairly good awareness of the nature and diversity of the ecosystems and human communities in the CALFED landscape. I now live in Washington State, am deeply involved with salmon restoration activities - as well as small scale farming - and have considerable experience with large government-funded restoration projects.

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As I read this proposal, without the context of the full CALFED picture, I am left wondering if these considerable CALFED dollars are being to generate the greatest bang for the buck. To coin an engineers' approach - are we following the critical path to resolve these large, complex problems across a landscape? In the Pacific Northwest, the states and feds so far have spent billions of dollars on the most politically expedient - but not the most economically expedient - restoration activities. The results are at best very mixed - with lots of public dollars being spent on so-called "restoration" projects that are often of very marginal benefit. Over time, there is the real threat of restoration fatigue by the public. If we are not spending money and generating results, it will be very hard over time to maintain public support for these types of projects. This means that we waste tremendous amounts of money and still fail to solve our problems.

CALFED funding cannot by itself resolve the considerable problems facing the Sacramento River and related watersheds. Other approaches - including regulatory - are still needed. It is in CALFED's interest to recognize this and encourage leadership and guide policy making in other arenas that will support CALFED's mission and effectiveness. But it is also in CALFED's interest to ensure that it understands its most effective tools that are within its mission and authority for achieving the best results on the ground. It needs to determine who and what, for example, are the greatest sources of degrading water quality within the basin - and then set out to limiting them through the most cost-effective means. Broad outreach to small landowners can be important, but it may not in the end solve the problem nor result in out getting the biggest bang for our (public) buck.

External Technical Review #2

Goals And Justification

This proposal seeks funding to expand monitoring efforts of restoration projects already initiated in the Willow Slough Watershed by Audubon California's Land Stewardship Program. The project would extend the research to two comparison sites: Jepson Prairie Preserve and The Nature Conservancy's Lassen Foothills Project. The goals of the project are to monitor in detail the success of particular restoration actions, then to "scale-up" and link the success at the site scale to ecosystem responses at the landscape scale. The conceptual model that underlies this project is innovative and is very clearly presented. The authors propose a "two-scale model" where they will simultaneously measure characteristics of restoration projects at specific sites, and then integrate these measures into a broader scale picture of the contribution of restoration actions to broad scale processes.

The hypotheses to be tested are included in each of the individual investigators' research plans, described in the Appendices. By testing these hypotheses, the investigators will contribute new knowledge and understanding of how different sites contribute to overall watershed health.

Approach

The approach to this project is to use the "two-scale model" to link ecological processes at fine scales to patterns and processes at broader spatial scales. This approach has been used infrequently, so it is innovative and will produce novel results. The project builds from previously funded restoration and monitoring work, and seeks to expand this work to two new landscapes (Jepson Prairie and Lassen Foothills). The work to date is clearly summarized in Tables 1 and 2, providing an easy-to-follow record of the project's progress. The investigators have already made substantial progress.

The use of comparison sites in this new proposal will be a

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particularly fruitful step in understanding if the principles learned are generalizable. For example, the use of prescribed fire and grazing management may influence soil and nutrient processes in a certain way in the Willow Slough, but may be different in the Lassen Foothills given the different topography, vegetation, and soil conditions. The monitoring and evaluation activities described in the proposal will contribute new information to scientists and decision makers. In particular, the integrated approach to linking soil cover and ecosystem processes will be particularly useful. The investigators have already used this integrated GIS/webtool to inform local landowners of conditions on their properties.

Technical Feasibility

The investigators have demonstrated their ability to carry out this project in the earlier phases of CALFED funding. They have already conducted an impressive set of restoration projects at specific sites, and have developed excellent relationships with local landowners. This link to local landowners is novel and commendable--the only way to truly implement these restoration efforts in the Central Valley is to have "buy-in" from local land owners, and this project appears to be a showpiece in that regard.

Performance Measures

The investigators have clearly established performance measures for restoration sites. For example, with regard to particular invasive species, they state the goal of reducing cover of those species to "25% of former levels." The monitoring and evaluation plan is comprehensive and spans several groups of organisms and several scales of ecological systems. For example, the project includes monitoring of ecosystem responses to restoration (e.g., nutrient dynamics, carbon storage, soil erosion potential), and links these to soil cover measured using remotely sensed images at different times of year. The project includes monitoring of perennial grassland restoration and seeks to examine population level responses (seed production, seedling establishment) and community level responses (community composition, abundance of

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exotic species). The project also includes sampling of avian species richness and species composition at restoration sites to gain an understanding of how these soil/plant characteristics influence animal species.

Products

Yes, the project will clearly lead to information that is both scientifically interesting as well as directly usable by local landowners and decision-makers (such as the NRCS). The investigators have described an impressive data management scheme that will be orchestrated by Malmstrom at MSU. The data will be collected in a spatially explicit manner and integrated across scales and projects. I applaud the investigators for their efforts in that regard and think that this makes the project very attractive and very likely to succeed. The project will also produce high quality results that can be published in peer-reviewed journals.

The proposal includes a very clear and detailed presentation of work schedules and deliverables for each task (Table 4). This is excellent and inspires confidence that the work will be completed on schedule.

Capabilities

This is a highly capable team. The mix of disciplines is appropriate and comprehensive, and the team has a very impressive record. Audubon California has clearly managed this project well and they have made excellent progress with previous CALFED funding. All of the investigators are well-established, prominent scientists who have excellent records.

Budget

Yes, the budget is reasonable and adequate, and does include a fair amount of cost sharing.

Additional Comments

This is an excellent proposal. The approach of linking fine-scale management actions to broad-scale ecosystem responses has not been frequently used (I can think of few published studies where this has been done). The PI's are well qualified to do the work and have already demonstrated success with this project. I suggest that the PI's consider more fully how the Lassen site can be/will be integrated with the Willow Slough and Jepson sites. It is mentioned in a few places in the proposal, but the PI's need to devote more thought to how this site can be compared to the others and integrated into the research plan.

External Technical Review #3

Goals And Justification

This proposal seeks funding to enhance monitoring of restoration projects in Central Valley grasslands and watersheds. The goal of expanding such monitoring beyond the Willow Slough watershed to other restoration sites is a laudable one and worthy of funding. The authors also propose to examine links between ecosystem responses to restoration, including soil processes, exotic species invasion, and avian community composition. Such integration is very important. The project will rely on the continued development of GIS and remote sensing data to assess restoration success. Presumably predictions could be drawn about non-target areas once this is developed as well. I would have liked to have seen more specific questions that the GIS and remote sensing projects will answer, especially given what a central role it plays in the success of the project.

Approach

This is a well-designed study. Monitoring has been taking place at Willow Slough for several years, so there is every reason to think that expanding the monitoring to other sites will be successful. A significant expansion of the scope of the project over previous funding is in the area of soil sampling. Dr. Eviner is well-qualified to complete the soils analysis, and the methodology is sound. Understanding the responses of soil properties to restoration is a much-needed piece of information.

Technical Feasibility

Yes, fully documented and technically feasible. The scale of the project is consistent.

Performance Measures

How the project's success will be evaluated is a weakness of the proposal. It was not clear how success will be defined. The GIS section does not adequately describe the methodology so as to evaluate how it will be interpreted. However, it may be wrong to judge this project in the same category as a more straight-forward restoration project. Instead, it seeks to integrate ecosystem responses in a way that will be useful to other projects. It is possible that the data will prove useful whether the restoration projects are 100% or only 50% percent successful if the factors contributing to the variation in success are better understood. (It would have helped if the proposal made such an argument, however).

Products

This is a particular strength of the proposal. The integration of monitoring with GIS data offers the hope that other projects outside the ones funded here will have helpful info. This is a significant contribution of the proposal. The authors have been successful in publishing in high-quality journals, and I have seen them present their findings in scientific meetings.

Capabilities

This is a highly qualified group, including the contractors.

Budget

The budget was difficult to judge - I did not see one for Task 3. The budget includes items for the training of graduate students and postdoctoral researchers.

Budget Review

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

Yes.

If no, please explain:

Recommend more detailed information on labor rates for each.

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

Yes.

3. Are project management expenses appropriately budgeted?

No.

If no, please explain

Benefit rates and indirect cost rates appear to be calculated higher than stated rates.

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

Indirect cost rate is 30%. No cost associated with rate described. Indirect cost rate for project management appears to be higher than stated rate.

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:

Labor rates appear to be reasonable. Additional labor rate information is needed to better determine.

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

Yes.

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Budget Review

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

Cost share partners (total: \$250000) Potential cost share partners (total: \$286,000)

Cost Sharing- Recommend that Grantee provide information regarding its financial capability and stability as well as its 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:

Not stated.

8. Are there other budget issues that warrant consideration?

Yes.

If yes, please explain:

Recommend clarification of direct cost for student fees (\$26,000) in budget detailed.

Other comments:

A financial evaluation of small and Non-profit organizations is recommended to ensure cost share funds are available and the organization has the financial capability to do business

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Budget Review

with the State.

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.

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?

Does not apply.

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:

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Environmental Compliance Review

Written permission has been obtained and copies of the permission letters are 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 CALFED or CVPIA funded phases of this project for which your agency manages contracts:

Project Title
CALFED Contract Management Agency
Amount Funded
Date Awarded
Lead Institution
Project Number

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.

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.

Other comments:

This project has an amendment request for the Feb. 17, 2005 amendments workshop to extend the project's end date to May 31, 2005 so that restoration projects can be fully

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Prior-Phase Funding Review

implemented. This proposal is the next phase funding of 01-N31, Willow Slough Watershed Rangeland Stewardship Program which is an application of 97-N10, Jepson Prairie Restoration.