

Proposal Reviews

#173: The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS

The Nature Conservancy

Research and Restoration Technical Panel Review

Sacramento Regional Review

External Scientific Review #1
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Prior Performance/Next Phase Funding #1
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Environmental Compliance

Budget

Research and Restoration Technical Panel Review:

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

Proposal Number: 173

Applicant Organization: The Nature Conservancy

Proposal Title: The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS

Review:

Please provide an overall evaluation summary rating:

Superior: outstanding in all respects;

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

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

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

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Superior	Although the panel recognizes the need for evaluation of restoration success on past sites to help guide future efforts, they did not think this project was well designed to fulfill this goal. The regional review panel rated this as low, and the costs were excessive.
-Above average	
-Adequate	
XNot recommended	

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

The goals are to identify: the important predators, prey and habitat requirements of floodplain-dependent sentinel species, and the biological and physical influences that shape their population dynamics and the riparian structure at large. The goals support several CALFED priorities, but the regional panel thought that the proposal was too broad in scope and did not include obvious benefits for CALFED restoration efforts. This was not set up as a replicated experiment, and a clear description of how the different portions of the proposal would be synthesized is lacking.

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

Reviewers generally found each portion of the proposal to be feasible, if permits can be obtained in a timely fashion. The authors have considerable expertise in their individual fields.

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

The panel agrees that an evaluation of restoration success is a valuable goal. The existing restoration sites provide an exciting opportunity to assess restoration strategies. However, we did not feel that the proposal in its present form takes advantage of this opportunity. The project is multi-disciplinary, but certainly not interdisciplinary. For a project that purports to analyze the physical influences that shape population dynamics, there is poor documentation of the methodology for measuring physical characteristics, and no physical scientist is participating in this research. The usefulness to decision makers was not clear, and the regional panel did not feel it would be of direct benefit to CALFED restoration efforts.

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

Reviewers agreed that the budget was high, and the budget summary is not detailed to the extent of each subtask. The Budget Summary is general, and most of the budget is directed to consultant fees. Many of the tasks would be appropriate for student involvement at a much lower cost.

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

The regional panel ranked this proposal Low, because the scope was too broad, the project too expensive, and the benefits for CALFED restoration efforts were not clear. They felt that monitoring the effectiveness of restoration efforts should have been a component of the original restoration efforts. Also, they felt that an evaluation of these large-scale horticultural restoration efforts were not relevant to the type of restoration that would be applied on a wide scale in the CALFED region.

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

Under Prior Performance two related difficulties were identified. The applicant proposed several terms for renegotiation after the PSP process, and the State then brought several terms back to the table. This resulted in unanticipated negotiations which took considerable time and resources to resolve. Under Environmental Compliance the project will require several types of permits, which need to be indicated on the Environmental Compliance Checklist.

Miscellaneous comments:

none

Sacramento Regional Review:

Proposal Number: 173

Applicant Organization: The Nature Conservancy

Proposal Title: The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS

Overall Ranking: Low -Medium -High

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

The panel felt this proposal was too broad in scope, too expensive, and did not include obvious benefits for CALFED restoration efforts.

1. Is the project feasible based on local constraints?

Yes -No

How?

The project includes numerous experimental components and a large number of researchers. The qualifications of the applicants and the extremely high price tag suggest this project is feasible.

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

Yes -No

How?

The project addresses regional PSP priority 1) develop and implement habitat management and restoration actions in collaboration with local groups, priority 3), to develop mechanistic models as restoration tools, and priority 4), to conduct riparian vegetation research projects.

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

Yes -No

How?

Our Yes is qualified. The project is well linked with restoration activities being conducted by The Nature Conservancy, however its relationship to other specific restoration efforts was not addressed in the proposal.

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

-Yes XNo

How?

The project was not brought before the Sacramento River Conservation Area Non Profit Organization, and did not appear to be coordinated with local people and institutions.

Other Comments:

The panel was concerned that the project, which would monitor restoration efforts, should have been included as a component of the original restoration efforts. The panel also felt that an evaluation of horticultural restoration efforts may not be relevant to large scale restoration since these efforts are expensive and labor intensive. Instead the panel hoped The Nature Conservancy would devote its energy to evaluating the role of natural processes in restoration.

External Scientific: #1

Research and Restoration External Scientific Review Form

Proposal Number: 173

Applicant Organization: The Nature Conservancy

Proposal Title: **The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS**

Conflict of Interest Statements:

I have no financial interest in this proposal.

Correct
 Incorrect

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

I am a research at UC Davis in a different department from the UCD PI's.

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	This research will provide an understanding that relates individual species responses to biotic and abiotic factors associated with riparian restoration, but perhaps will not be able to arrive at landscape level factors that are associated with successful restoration. Costs, especially overhead, seem excessive.
XGood	
-Poor	

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

The goal of this project is to identify limiting factors that shape the population dynamics of a suite of plant, insect, and animal species and relate this to riparian restoration efforts, with a special emphasis on NIS. Discovering factors that can impede or promote successful riparian restoration is timely and important.

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

CalFed and others have funded a number of habitat acquisition and restoration grants along the Sacramento River, and funded studies on restoration and monitoring on the Cosumnes. Judging the success and reasons for restoration failure on the Sacramento River seems prudent given the amount of preservation effort already expended. The conceptual model is clear and explains how the facets of the research combine to result in strategies for management that will favor native species.

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

Several sub-studies will share the same sampling matrices which will increase the benefit of the project. Correlative studies, relating species abundance with abiotic and biotic variables will be one type of result; comparing sites that have been restored with those that have not will be another type of result. However, since only 6 restored sites will be used, it may not be statistically possible (due to lack of replicated "treatments") to tease out factors potentially influential to restoration success such as time since planting, characteristics of the surrounding landscape, physical processes, site history, etc. That said, the interdisciplinary nature of the project, iterative process of data collection, and overarching modeling make this project data and result rich.

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

The various approaches are fully documented and the research team has extensive experience with the ecosystem and their methods, which should connote the success of the project. The scale is appropriate for species studies, may be too small for landscape level factors.

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

Performance measures are termed "success indices" by the team and consist of in-depth results on population biology, diversity and abundance of their target species.

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

They provide an extensive list of expected products, which are mostly peer-reviewer publications and expected delivery dates.

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

The research team is well qualified to perform this research; support will be provided by several organizations/Universities.

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

This is an expensive research project with lots of investigators and lots of overhead - TNC charges 22% on top of the overhead associated with each individual PI. It is difficult to determine the indirect costs specific to each task as more than one investigator will be working on most tasks. If indirect costs for a task were, for example, 40%, then the true overhead for the task would be closer to 50% (40% X 22%).

Miscellaneous comments:

External Scientific: #2

Research and Restoration External Scientific Review Form

Proposal Number: 173

Applicant Organization: The Nature Conservancy

Proposal Title: **The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS**

Conflict of Interest Statements:

I have no financial interest in this proposal.

Correct

Incorrect

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

None

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	This is an intriguing proposal in that it attempts to link many different areas of investigation to the success of various taxa. The direct applicability to future restoration efforts is not as clear as I would like, and the analysis of physical factors is weak.
XGood	
-Poor	

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

The goals are to identify: the important predators, prey and habitat requirements of floodplain-dependent sentinel species, and the biological and physical influences that shape their population dynamics and the riparian structure at large. The general hypothesis is that the success of restoration efforts at particular sites can be predicted based upon analyses of local site characteristics and landscape-scale factors. The goals and hypotheses are worthy, but very broad. To disprove this hypothesis the authors would have to find no relationship between restoration success and any factor that we usually measure (if it's not a local site characteristic, or a landscape scale factor, then the only thing left is global change, or a totally random universe). Some of the subtasks include more specific hypotheses, however.

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

There is much to learn about what leads to success in restoration efforts, and even how we should define success.' This proposal will help assess the various factors affecting the distribution, abundance and health of several taxa. The conceptual model in Figure 3 is helpful in showing the links among physical attribute, vegetation and animal distributions. Four main tasks (vegetation, elderberry-associated insects, birds and fish) as well as synthesis are identified. Each of the four main tasks are related to ERP goals.

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

The authors present a solid approach to investigate several specific taxa, and they combine the efforts of several branches of biology, especially in defining where optimal restoration strategies for each taxa overlap. The proposal combines spatial and demographic models in the synthesis phase. However, for a "local site characteristics and landscape factors" proposal, there is no geomorphologist, soil scientist, hydrologist or other physical scientist on staff. What should be an interdisciplinary effort instead glosses over the first tier of their conceptual model: physical site conditions. For example, what type of flood history analysis will be done? How will the history of disturbances through flooding and sedimentation be quantified? How will sediment deposits be measured and dated? What is the particle size distribution and water holding capacity and spatial variability of floodplain deposits? How will "soil stratigraphy" be used? The authors propose using stage/discharge relationships - where will discharge be measured and how do these relationships hold for backwater habitats? How stable are the stage/discharge relationships? How, where and at what frequency will turbidity be measured? Detailed measurements of groundwater, soil moisture and water use will be made for two years, but how will the results be extrapolated to other flow regimes? How will droughts, floods or a series of wet years be factored in to the evaluation of the long-term success of restoration sites?

The authors propose to survey the restoration sites with a high precision GPS (\$48,000) with a vertical accuracy of +20mm, but there is no justification given for this resolution. The surface roughness of a floodplain is easily in excess of 20 mm, and a total station survey setup and \$200 GPS receiver should do the job. In Subtask 3, floodplain elevations will already be determined by digital elevation models derived from US Army Corps of Engineers data.

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

There are many tasks, but there are also many researchers involved, so the time frame and proposed work seem feasible. The project will require collecting permits, which may affect the time frame, however.

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

Two types of performance standards are listed. The majority of the work in each task will be presented in peer-reviewed journals and at conferences, so will receive appropriate scrutiny. The researchers also propose to develop performance measures for restoration sites, referred to as restoration success indices,' which presumably can be applied to future evaluations of restoration activities as well.

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

Both peer-reviewed journals and technical manuals are listed as products. Good data management and distribution are proposed. Management recommendations for optimizing the health of vegetation, fish, insect and avian populations through restoration activities will be formulated.

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

This is a strong team with a wide range of expertise. They are qualified to carry out this project.

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

The costs of individual subtasks were not listed. By far, most costs were lumped under "Services or Consultants" rather than salaries, so it was difficult to justify individual tasks. The rates for consultants were calculated as the total amount that each subrecipient requires to complete the specified task, divided by the total amount of time it will take to complete the task, assuming 365 days of work per year. Again, it was difficult to justify specific tasks with this methodology. Direct labor hours were reasonable, but they were a minor part of entire budget. The budget seemed padded. For example, a \$47,000 boat for two years of electrofishing is high. How does this compare with renting a boat, or perhaps the researchers could borrow a boat from Fish and Game. There was inadequate justification for a \$46,000 GPS unit. I recommend cutting funding for each task (as suggested by the authors at the top of page 14).

Miscellaneous comments:

Prior Performance/Next Phase Funding: #1

New Proposal Number: 173

New Proposal Title: The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS

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

97-N02, Sacramento River Floodplain Acquisition and Riparian Forest Restoration 97-N03, Sacramento River and Riparian Forest Restoration 97-N04, Sacramento River Meander Restoration 97-N08, Lower Mill Creek Riparian Restoration 97-N14a, Cosumnes Floodplain Acquisition and Restoration 01-N10, Cosumnes/Mokelumne Corridor Floodplain Acquisitions, Management, and Restoration Planning 01-N23, Staten Island Acquisition All Ecosystem Restoration

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

N/A

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

-Yes XNo -N/A

If no, please explain any difficulties:

There were two related difficulties: first, after outlining six terms during the PSP process to be reconsidered, applicant raised several additional terms for renegotiation; and second, the State brought several terms back to the table as well. Both difficulties resulted in unanticipated negotiations over terms not raised during the PSP process which diverted considerable time as well as State resources. This situation was amplified due to NFWF's limited ability to negotiate contract terms."

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

XYes -No -N/A

If no, please explain any inaccuracies:

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

XYes -No -N/A

If no, please explain deficiencies:

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

Yes -No -N/A

If no, please explain deficiencies:

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

-Yes -No N/A

If no, please explain:

This is not a next phase project.

Other Comments:

Prior Performance/Next Phase Funding: #2

New Proposal Number: 173

New Proposal Title: The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS

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

00-F03, Floodplain Acquisition and Sub-Reach/Site Specific Management Planning: Sac River (Red Bluff to Colusa); 98- F18 Floodplain Acquisition, Management and Monitoring on the Sac River; CALFED ERP

2. Prior CVPIA project numbers, titles, and programs: *(list only projects for which you are the contract manager)*
3. Have negotiations about contracts or contract amendments with this applicant proceeded smoothly, without persistent difficulties related to standard contract terms and conditions?

Yes -No -N/A

If no, please explain any difficulties:

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

Yes -No -N/A

If no, please explain any inaccuracies:

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

Yes -No -N/A

If no, please explain deficiencies:

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

Yes -No -N/A

If no, please explain deficiencies:

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

Yes -No N/A

If no, please explain:

Other Comments:

Applicant has performed well in implementing previous projects.

Prior Performance/Next Phase Funding: #3

New Proposal Number: 173

New Proposal Title: The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS

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

Acquisition of Southam Orchard Properties for Preservation of Riparian Habitat, CVPIA grant Hartley Island Acquisition, CVPIA 11332-7-G017 Singh Walnut Orchard, 11223-0-G014 L&L/Hamilton, 11332-7-G030 Birkes, 11332-8-G124 Dana, 11332-8-G048 Latimer, 11332-8-G123 Deer Creek Fencing, 11332-0-G016 Eagle Canyon (Pelton) Ranch, 11332-0-G104 Leiningen easement, 11332-7-G030

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

XYes -No -N/A

If no, please explain any difficulties:

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

XYes -No -N/A

If no, please explain any inaccuracies:

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

XYes -No -N/A

If no, please explain deficiencies:

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

XYes -No -N/A

If no, please explain deficiencies:

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

XYes -No -N/A

If no, please explain:

Other Comments:

Excellent contractor to work with. Always on time and within budget and provides high level products.

Environmental Compliance:

Proposal Number: 173

Applicant Organization: The Nature Conservancy

Proposal Title: The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS

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

-Yes No

If no, please explain:

Project will require Scientific Collecting Permits; 2081 permits if any State-listed species might be taken, a Federal permit to mistnet birds, and FESA compliance if any Federally-listed species might be taken. These permits need to be indicated on the Environmental Compliance Checklist.

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

-Yes No

If no, please explain:

Budget detail does not indicate funds for obtaining necessary permits. If researchers already have them, this should be indicated.

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

-Yes No

If yes, please explain:

If necessary permits are obtained, project will be feasible.

Other Comments:

Budget:

Proposal Number: 173

Applicant Organization: The Nature Conservancy

Proposal Title: The Effects of Local Site Characteristics and Landscape Factors on Restoration Success at the Sacramento River: A Multi-Disciplinary Study Using Statistical Modeling and GIS

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

Yes -No

If no, please explain:

Please see Budget Justification for description of Service Consultants and the break down for their fees, travel, supplies, etc. The Budget Summary is not detailed; however, the details are found in the Budget Justification.

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

Yes -No

If no, please explain:

Each task is budgeted; however, the detail for each task is identified in the Budget Justification and Work Schedule. The Budget Summary provides only a broad overview.

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

Yes -No

If no, please explain:

4. Are appropriate project management costs clearly identified?

Yes -No

If no, please explain:

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

Yes -No

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

6. Does the budget justification adequately explain major expenses?

Yes No

If no, please explain:

7. Are there other budget issues that warrant consideration?

Yes No

If yes, please explain:

Other Comments:

Please see Budget Justification for description of Service Consultants and the break down for their fees, travel, supplies, etc