

Proposal Reviews

#36: Strategies for incorporating wildlife-friendly agriculture in the Delta and East Tributaries Region of California

California State University, Hayward

Initial Selection Panel Review

Research and Restoration Technical Panel Review

Delta Regional Review

External Scientific Review

#1

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Environmental Compliance

Budget

Initial Selection Panel Review:

CALFED Bay-Delta 2002 ERP PSP Initial Selection Panel Review

Proposal Number: 36

Applicant Organization: California State University, Hayward

Proposal Title: Strategies for incorporating wildlife-friendly agriculture in the Delta and East Tributaries Region of California

Please provide an overall evaluation rating.

Explanation of Recommendation Categories: Fund

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

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

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

Note on "Amount":

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

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

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

Amount: **\$0**

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

None

Provide a brief explanation of your rating:

The Selection Panel concurs with the technical Panel evaluation that the biotic assessment task was not sufficiently developed. The landowner survey and needs analysis could be very useful, but needs better development. The Panel encourages the proponent to participate in the Working Landscapes Work Group and develop local contacts in order to best assess landowner practices and needs.

Research and Restoration Technical Panel Review:

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

Proposal Number: 36

Applicant Organization: California State University, Hayward

Proposal Title: Strategies for incorporating wildlife-friendly agriculture in the Delta and East Tributaries Region of California

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	Two of three outside reviewers thought that the project was excellent; one deemed it poor, but potentially useful after re-write. Important methodological weaknesses were identified by the latter reviewer. Regional review was largely negative. Suggest re-submission be encouraged following address of the very legitimate concerns expressed about experimental design here and in the outside reviews.
-Above average	
X Adequate	
-Not recommended	

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

The goals are clear; the justification and literature review could have been better. Specifically, there are numerous scientific papers now available through webofscience.com that address bird diversity and abundance for different farming systems, including conventional, reduced tillage, and organic, in the US northern Great Plains, Canada, and Great Britain. A few examples of some papers that should probably have been consulted:

Chamberlain D.E., J.D. Wilson & R.J. Fuller. 1999. A comparison of bird populations on organic and conventional farm systems in southern Britain. Biological Conservation 88:307-320. Davidson C., H.B. Shaffer & M.R. Jennings. 2001. Declines of the California red-legged frog: Climate, UV-B, habitat, and pesticides hypotheses. Ecological Applications 11(2):464-479. Hilty, J.A. & A. Merenlender. 2000. Faunal indicator taxa selection for

monitoring ecosystem health. *Biol. Conserv.* 92:185-197. Merenlender, A. M. 2000. Mapping vineyard expansion provides information on agriculture and the environment. *California Agric.* 54(3):7-12. Scott, T.A., W. Wehtje & M. Wehtje. 2001. The need for strategic planning in passive restoration of wildlife populations. *Restoration Ecology* 9:262-271. Sparling, D.W., G.M. Fellers & L.L. McConnell. 2001. Pesticides and amphibian population declines in California, USA. *Environmental Toxicology and Chemistry* 20(7):1591-1595. Vickery J.A., J.R. Tallowin, R.E. Feber, E.J. Asteraki, P.W. Atkinson, R.J. Fuller & V.K. Brown. 2001. The management of lowland neutral grasslands in Britain: effects of agricultural practices on birds and their food resources. *Journal of Applied Ecology* 38:647-664.

For this proposal, it would be helpful to frame comparisons not only between agricultural lands and wildlands, but also among different farming systems.

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

The P.I. apparently has limited background in this area of research, but that by itself need not deter funding. One reviewer points out the need for a balance of biological and social science skills to thoroughly address these questions. That reviewer also raises questions as to how fields that have rotational crops will be assessed. There are other serious methodological concerns, some of which could have been addressed in part through review of the papers listed above. PI should be encouraged to resubmit following address of those issues, outlined here and in the separate outside reviews.

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?

If the experiments and other work are well conducted, the products listed will be very useful. See above bolded comments on literature review, and the methodological concerns raised in one of the above reviews, especially the question of how crop rotation affects how individual fields are regarded in an experimental setting. This and related issues are addressed in some of the recommended references that we listed above.

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

The budget has some problems, as noted by one reviewer:

The budget seems overly large. The work schedule notes vegetation and animal assessments in years 1 and 3 only, yet these assessments are the second largest line item in the budget every year. The budget justification lists no equipment with a useful life of more than 1 year and an acquisition cost of more than \$5000 yet a \$5500 computer is included in the budget.

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?

Delta: Low ranking. Scientific information will not be generated that will be very helpful in making decisions in the Delta. The proposal would do little to guide future practical conservation and restoration projects in critical parts of the Delta's habitat corridors. Proposal did not explicitly reference the eight priorities for the Delta. Proposal claims relationship with and knowledge of other outreach efforts DUs Valley Care Program.

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?

This project will require a scientific collecting permit. No budget form concerns.

Miscellaneous comments:

None

Delta Regional Review:

Proposal Number: 36

Proposal Title: Strategies for incorporating wildlife-friendly agriculture in the Delta and East Tributaries Region of California

Overall Ranking: ☒Low ☐Medium ☐High

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

Panel did not feel that proposal, as presented, would provide scientific information that will be helpful in making decisions in the Delta. The proposal does little to provide additional guidance for future action-oriented projects that secure and restore critical parts of the Delta's habitat corridors.

1. Is the project feasible based on local constraints?

☐Yes ☒No

How?

Uncertain; I could not determine if local constraints would impede the projects ability to move forward in a time

Project aims to do the following: Determine what wildlife friendly agricultural methods are or can be used in the Delta Compare their effectiveness Determine psychological, socioeconomic, and ecological factors that influence landowner decisions on what to do on their lands Identify incentives to farmers to practice wildlife friendly techniques Assess wildlife species composition, distribution, and abundance.

** In my view it seems unlikely that all the features of the proposed project are likely to be successfully carried out. Of primary concern are the biological surveys proposed and any assessment of different wildlife friendly techniques base on those surveys. Inappropriate conclusions could be drawn based on inadequate data.**

** Access to some private farmlands would be needed and it is not certain that access will be granted ly and successful manner.**

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

☒Yes ☐No

How?

Proposal claims it meet objectives for 5 of the Strategic Plan goals. Proposal did not explicitly reference the eight priorities for the Delta.

 Restore upland wildlife habitat and support wildlife-friendly agriculture.

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

XYes -No

How?

Proposal claims relationship with and knowledge of other outreach efforts DUs Valley Care Program. Work may have restoration and conservation consequences.

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

XYes -No

How?

CSU Hayward UCD and associated ecologists are involved. Locals, through the proposed interview process will be involved.

The plan for local involvement appears adequate.

Other Comments:

 The contribution of this project may provide some new insight into the issue of wildlife friendly agriculture. Much is already known about this issue, however.

 We do have knowledge gaps in areas such quantifying the concentration of pesticides in drain water released from Delta islands using an aggressive wildlife-friendly approach. These gaps will likely not be addressed by this proposal.

External Scientific: #1

Research and Restoration External Scientific Review Form

Proposal Number: **36**

Applicant Organization: **California State University, Hayward**

Proposal Title: **Strategies for incorporating wildlife-friendly agriculture in the Delta and East Tributaries Region of California**

Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

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

none

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	Design needs improvement, especially with respect to assessment of the biotic communities. More consideration needs to be given to comparisons between wildlife-friendly and non-wildlife-friendly agricultural methods.
-Good	
XPoor	

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

The goals are clearly stated but I fear are too large to be accomplished with this proposal and design. No hypotheses are stated; this appears to be essentially a descriptive study.

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

The author presents an extensive and wide-roaming introduction to the proposal, summarizing the importance of biodiversity and of social practices such as incentives and partnerships.

Comparisons of biodiversity among 'wildlife-friendly agriculture' areas and natural areas are important, but would be more important if the comparisons also included 'non-wildlife-friendly agriculture' areas. As the proposal currently stands, I expect that it will be demonstrated that biodiversity is lower in areas where wildlife-friendly agriculture has been practiced than in areas that are natural. However, this has little explanatory value unless it is also compared to biodiversity levels in areas where agricultural methods have not been wildlife-friendly.

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

The approach involves sampling the biotic communities of two types of sites (areas using wildlife-friendly agriculture and natural areas) and interviewing the farmers using wildlife-friendly techniques. I have serious concerns about the suggested methodology for sampling the vegetation and animals (see below).

Depending on how many people are interviewed (no indication of an expected sample size is given), the survey data could provide informative knowledge about the farming practices in the area. The methods of analyzing this survey data are poorly described. Will the people be randomly chosen for participation in the survey?

More consideration should be given to the technical design details. For example, how will sites that switch agricultural practices from one year to another be analyzed? How will annual changes in the biota be incorporated into the analysis?

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?

As noted above, I have serious concerns about the suggested methodology for sampling the vegetation and animals.

The number of sites is not specified, nor are the criteria for describing sites given. How many years of wildlife-friendly agriculture are necessary on a site for it to be a potential study site? A site on which conservation tillage has been practiced for a single year would be expected to have less biodiversity than a site on which conservation tillage had been practiced for 20 years.

How big will each site be? This will greatly affect the variability contained within each site. If sites differ greatly in size, the number of samples per site may have to vary.

The proposed number of samples within each site is inadequate to adequately sample the natural range of variability in the biotic community. The proposal states that vegetation will be sampled using 3 1 m² plots per site. From my experience, the number of samples per site must be increased by at least an order of magnitude if there is to be any hope of discerning differences among sites. Also, frequency estimates calculated based on 3 samples are essentially useless!

For the faunal surveys, more attention should be given to home ranges and the sampling intensity required to get a realistic idea of which species are present. A 100 m transect may lie entirely within the home range of a single squirrel pair.

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?

Few performance measures are described for this essentially descriptive study.

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?

There is an extensive list of planned reports/outcomes for this proposal. The utility of these products will depend on the design of the study. For example, will survey participants be randomly selected? If not, how do we know that this survey accurately described the thoughts of 'landholders in the Delta Region of California' about habitat enhancement projects (report #6)?

This seems like an overly large list of products to be generated by one person working for 3 years on this budget.

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 lack of his own citations suggests that the applicant may not have a track record in this area. A properly designed study of this scope would require someone who is an expert in both the biotic and the social aspects of agriculture; I cannot assess whether the applicant is an expert in both.

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

The budget seems overly large.

The work schedule notes vegetation and animal assessments in years 1 and 3 only, yet these assessments are the second largest line item in the budget every year.

The budget justification lists no equipment with a useful life of more than 1 year and an acquisition cost of more than \$5000 yet a \$5500 computer is included in the budget.

Miscellaneous comments:

With revision and refinement, I think this could be considered again. I suggest separating the biotic assessments and the social surveys into two smaller proposals.

External Scientific: #2

Research and Restoration External Scientific Review Form

Proposal Number: **36**

Applicant Organization: **California State University, Hayward**

Proposal Title: **Strategies for incorporating wildlife-friendly agriculture in the Delta and East Tributaries Region of California**

Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

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

none

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
X Excellent	The proposal includes a good strategic overview. The P.I. has good qualifications. The literature review was fairly good, although there are a lot of additional, recent papers on bird use of different farming systems that should have been consulted. The budget is reasonable. Fund.
-Good	
-Poor	

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

Yes. Yes.

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?

Yes, although the literature review could have been better. There are many recent papers available on bird density and diversity as related to farming systems. Few of these were consulted. Research: justified.

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?

Yes. Yes. Yes. Yes.

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

Yes. P>90%.

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?

Yes. Yes. Not appropriate.

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?

Yes. Not appropriate. Yes.

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?

Good. Yes. Yes.

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

Yes.

Miscellaneous comments:

External Scientific: #3

Research and Restoration External Scientific Review Form

Proposal Number: 36

Applicant Organization: California State University, Hayward

Proposal Title: **Strategies for incorporating wildlife-friendly agriculture in the Delta and East Tributaries Region of California**

Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

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

None

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
-Excellent	The justification is good, however, the approach is wholly insufficient and no specific measures are detailed in the proposal.
-Good	
X Poor	

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

The project goals and objectives are clearly stated. There doesnt seem to be a testable hypothesis

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?

Justification is clearly provided to restore and enhance biodiversity in agroecosystems.

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

The approach is not clear.

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?

It is difficult to evaluate feasibility. For example, the first year, the vegetation and animal assessments in areas where wildlife-friendly farming techniques have been implemented in the Delta Region. Where are these areas? What is the scale of area? Also, how will information on farmers attitudes and needs be gathered in the first year?

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?

No specific measures are described.

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?

A list of reports/outcomes are identified. However, what benchmarks will be used to assess what agricultural land management approaches conserve soils and minimize pollution to our waterways (#8).

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?

There is only 1 person listed, that is the PI. It is hard to judge his field experience and survey experience. Are there other staff involved? If so, what is there expertise? Who will do the GIS work?

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

The budget appears reasonable.

Miscellaneous comments:

External Scientific: #4

Research and Restoration External Scientific Review Form

Proposal Number: **36**

Applicant Organization: **California State University, Hayward**

Proposal Title: **Strategies for incorporating wildlife-friendly agriculture in the Delta and East Tributaries Region of California**

Conflict of Interest Statements:

I have no financial interest in this proposal.

XCorrect

-Incorrect

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

None

Review:

Please provide an overall evaluation summary rating:

Excellent: outstanding in all respects;

Good: quality but some deficiencies;

Poor: serious deficiencies.

Overall Evaluation Summary Rating	Provide a brief explanation of your summary rating
XExcellent	<p>The acreage of land in the Delta currently committed to conservation (refuges, parks, etc.) is very small; the amount of land that is farmed is quite large. Without contributions from farmers, habitat protection and restoration, and protection of biodiversity is therefore limited to a very small percentage of Delta land.</p> <p>Convincing farmers to use methods that sustain wildlife and wildlife habitat seems to be extremely important, if the overall health of Delta ecosystems is to be improved for the long term. This research proposal makes an important contribution to that goal by investigating farming methods that encourage wildlife, and determining the incentives needed for farmers to switch to more ecologically sound methods.</p>
-Good	<p>This proposal is given an excellent rating for the following reasons: The justification for the research and the study design (approach) are thorough and detailed. The methods of data collection and analysis are appropriate to the study.</p>
-Poor	<p>The work seems feasible and capable of being completed according to the proposed schedule. Based on proposal content, the applicant is sufficiently knowledgeable and experienced to carry out the project successfully. The products (reports and slide show) are listed by title, and together constitute a valuable package that can be used by agency decision-makers and others to promote more sustainable, ecologically sound farming practices in the Delta. The costs seem reasonable and in line with the tasks that will be accomplished.</p>

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

Yes, the goals, objectives and hypotheses all are clearly stated and internally consistent.

The general goal of this research project is to identify which user-friendly agricultural methods are being used, or could be used, in a specified region of the Sacramento-San Joaquin Delta Region and East Tributaries Region. A lengthy introduction provides the background for understanding this goal and convincingly argues its significance to biodiversity protection.

The objectives are clearly specified and all relate to the stated goal. Some data will be gathered through the use of a detailed questionnaire, a copy of which is included as an addendum to the proposal.

The hypothesis to be tested is that farmers are motivated primarily by economic benefits, so if they are to incorporate wildlife-friendly strategies, they must perceive those strategies as economically beneficial.

The concept investigated by this research seems important and timely, given the current rates of biodiversity loss in the Sac-San Joaquin Delta area and Central Valley, largely due to agricultural activities, especially more recent large-scale activities, and the enormous acreages of cultivated land in the project area. Protection of uncultivated land and restoration of previously cultivated land, especially in riparian areas, are unquestionably more important than wildlife-friendly farming, but there is definitely a role for the latter to

play. (See question 2, below.)

This reviewer agrees that the proposal addresses Goals 1 through 6 of the CALFED ERP goals.

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?

Supporting information in the introduction provides a convincing justification for the project. Wildlife-friendly farming has a role to play in biodiversity and habitat protection in the project region, especially if that includes a shift in attitude in the farming community (already occurring in some areas) that would result in greater and voluntary participation in activities that are environmentally more benign.

There is definitely a need to encourage more ecologically sound farming practices in this region, and the ideas that would be examined by this study could lead directly to methods to bring about that outcome. The proposal author demonstrates a clear understanding of the potential ecosystem benefits of what is called "wildlife friendly farming," but could also be called ecologically-sensitive farming.

The project's conceptual model is presented as a flow diagram that shows how information from the research could lead to environmental improvements through landowner education, priority re-assessment and resulting changes in farming practices.

In addition, a conceptual model from the field of study, called the "source/sink" model for wildlife habitat (Best 1986) is discussed in the introduction as a way of conceptualizing the impacts of farming on wildlife and how habitat interventions can mitigate negative impacts. Discussion of this model is included in the in-depth introduction that provides a thorough background for the question being investigated.

The information in the proposal justifies the selection of a research project type.

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?

This is a research project and the approach is presented in the form of a study design. The study design incorporates all of the objectives and describes in detail how each will be completed. Appropriate controls are included, for example, results of surveys of vegetation and animals found on farms that have been using wildlife-friendly farming practices will be compared with results from similar surveys on nearby reference areas that have not been farmed. Sampling will include quantitative and qualitative methods that are appropriate, although for one of the factors, the sample size (3 plots) used for frequency data is much too small to provide meaningful results. The study design describes all field survey and other methods in detail, specifying numbers of transects, types of traps, number and season of sampling periods, and so forth, for all segments of the project. The study design also specifies appropriate statistical tests (student's t-test, analysis of variance (ANOVA), and others) for the data.

The study appears to be well-designed and therefore capable of generating important new knowledge. The results of the study -- knowledge about what motivates farmers to try novel farming methods that may promote biodiversity and ecosystem health -- could be very useful to decision-makers trying to find effective "carrot-based" methods of encouraging more ecologically sound farming practices.

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?

An extensive introduction provides background to the problem that will be explored. The approach utilizes established methods, and is fully documented by references from appropriate scientific journals and other published sources.

Given the nature of the project, there is no reason to think it cannot be completed successfully and on schedule. Even the questionnaire that will be used to solicit information from farmers has been completed (a copy is found at the end of the proposal.) One possible limitation is lack of cooperation by farmers, but most or many are likely to be willing to participate since it costs them nothing and may lead to more profitable farming methods.

The scale of the project, as exemplified by the length of the study, the type and duration of field surveys, the methods used to solicit information from farmers, the methods of data analysis, appears consistent with the stated objectives.

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?

For a research project such as this one, "success" is generally measured through peer evaluation. While not expressly stated in the proposal, the reports (products) produced by this study will likely be submitted to reviewed journals for evaluation and comment. Other faculty and students at Cal-State Hayward and elsewhere will likely contribute to review of the project and its products.

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

The proposal lists a series of reports and other products that will result from the project. The reports will cover (summarized from the text) 1) comparing the effectiveness of different approaches, 2) approaches that can be incorporated without compromising economic objectives, 3) wildlife species composition, abundance and distribution in agricultural areas, 4) value of agricultural habitat patches to migratory wildlife, 5) views of landholders towards habitat enhancement projects, 6) effectiveness of incentives, 7) land management approaches that conserve soil and water, and 8) institutional mechanisms that are effective in encouraging wildlife-friendly farming. In addition, a slide presentation on different farming techniques in the Delta will be produced.

Considered together, these products constitute a valuable package that could be used by agency decision-makers to promote more ecologically sound farming techniques in the Delta and elsewhere in California.

Regarding interpretative outcomes, the project will compare the biological effectiveness and cost/benefits of a variety of different wildlife-friendly techniques, providing a means of selecting the best practices.

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?

Based solely on the text describing the project that is in the proposal, the researcher submitting the proposal appears fully qualified to carry out the project. However, the information in the proposal describing the applicant's specific qualifications is very brief.

This research project will be completed by one researcher and one assistant. The proposal includes only a single paragraph describing the education and experience of the researcher. No publications on this topic (or any other) by the proposed researchers are included in the list of references. The proposal states that one other person assisted in proposal development.

This reviewer is unfamiliar with the project applicant's professional experience and therefore is unable to comment on his qualifications on that basis. However, evaluated on the basis of proposal quality, the applicant appears fully qualified. The proposal is very thorough, very well-written, is intellectually coherent and, provided that the proposal was written mainly by the applicant, shows that the applicant has a considerable knowledge of and interest in the research topic.

The researcher is associated with Cal-State Hayward, and the proposal states that all administrative, operations and equipment for this project will be based on campus.

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

The hours and per task costs seem reasonable for the work that will be performed. The per hour salaries are in line with current standards. The total cost of \$165,479 seems reasonable for a 3-year project covering all the objectives listed in the proposal.

Miscellaneous comments:

None

Environmental Compliance:

Proposal Number: 36

Applicant Organization: California State University, Hayward

Proposal Title: Strategies for incorporating wildlife-friendly agriculture in the Delta and East Tributaries Region of California

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

-Yes **X**No

If no, please explain:

This project will require a scientific collecting permit.

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

XYes -No

If no, please explain:

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

-Yes **X**No

If yes, please explain:

Other Comments:

Budget:

Proposal Number: 36

Applicant Organization: California State University, Hayward

Proposal Title: Strategies for incorporating wildlife-friendly agriculture in the Delta and East Tributaries Region of California

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

XYes -No

If no, please explain:

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

XYes -No

If no, please explain:

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

XYes -No

If no, please explain:

4. Are appropriate project management costs clearly identified?

XYes -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?

XYes -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?

XYes -No

If no, please explain:

7. Are there other budget issues that warrant consideration?

-Yes ☒No

If yes, please explain:

Other Comments: