EVALUATION OF GIANT GARTER SNAKE RESPONSE TO CALFED'S ENVIRONMENTAL WATER ACCOUNT PROGRAM: ADAPTIVE MANAGEMENT FOR WILDLIFE FRIENDLY FARMING

Glenn D Wylie

Initial Selection Panel Review

0086

EVALUATION OF GIANT GARTER SNAKE RESPONSE TO CALFED'S ENVIRONMENTAL WATER ACCOUNT PROGRAM: ADAPTIVE MANAGEMENT FOR WILDLIFE FRIENDLY FARMING

United States Geological Survey

Applicant amount requested: \$1,187,367

Fund This Amount: \$1,187,367

The panel likes that the proposal is tied to EWA and wildlife friendly ag/working landscapes, and found the proposal to be highly responsive to this PSP. The proposal provides information that the agencies want and need relative to the Biological Opinion for the Environmental Water Account and recommended funding the project with revisions. The PIs are well-qualified and experienced, and the proposal has an excellent data management approach.

The proposal should be revised to more clearly connect the evaluation to agricultural management actions. The proposal should also be revised to ensure that the deliverables include peer reviewed articles of journal quality and deliverables such as maps and journal articles should be described in the schedule. (Recognizing that publication takes time beyond the scope of the grant, the proposal should establish that there is sufficient funding for journal articles.) The deliverables should spell out that the data and products are made available to CALFED agencies. The proposal should be revised to include clearly-written hypotheses, and not just objectives.

The Selection Panel is concerned that there is a limited pool of expertise on Giant Garter Snake, and recommends and requires that the applicants ensure sufficient staffing and resources are applied to the proposal.

Initial Selection Panel Review

This study depends on managed wetlands yet to be created by another proposal. The applicant would need to specify how this project is viable not withstanding the restoration on CWA study sites that may not be funded.

Fund With Conditions

Technical Panel Review

Proposal Name: EVALUATION OF GIANT GARTER SNAKE RESPONSE TO CALFED'S ENVIRONMENTAL WATER ACCOUNT PROGRAM: ADAPTIVE MANAGEMENT FOR WILDLIFE FRIENDLY FARMING

Applicant Organization: United States Geological Survey

Amount Requested: \$1,187,367

Panel Rating:

Good - Quality but some deficiencies

Panel Summary

The proposal was strong in the areas of GGS biology and monitoring. The experimental design was sound, and an understanding of GGS movement in fallow fields would be useful in many different planning and regulatory contexts. However, the data analysis component of the project is not informed by current scientific thinking in terms of habitat fragmentation, demographics and meta-population dynamics. The connection to management practices is tenuous – it is possible that GGS movement is influenced by a number of factors that were not addressed (fallowing conditions, road locations, predators, etc.). The proposal lacked detail about data development, analysis and interpretation.

The panel emphasized that if the project undergoes review during the CALFED contracting phase, deliverables that analyze specific effects of actions should be stipulated. These include that any findings should be published in peer-reviewed or management journals and popular press articles to be disseminated to a wider audience.

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Applicant Organization: United States Geological Survey

Amount Requested: \$1,187,367

Goals

Rating	fair
Comments	The proposal does a good job of describing the problem the project is trying to address. One of the main objectives of the project is to assess giant garter snake response to rice fallowing and response to habitat restoration. The proposal describes ERP goals and objectives related to giant garter snake (p. 1). The agricultural goals are not as well described. There isn't much detail on how information generated by this project (which is essentially a research project) will be used farmers. The

Justification And Conceptual Model

Rating	fair
	The conceptual model is only fair because it lacks some critical aspects and important details (p. 2). The conceptual model consists of a narrative only. A conceptual model diagram depicting management practices with associated ecosystem and giant garter snake (and perhaps agricultural benefits) benefits would have been a useful addition to conceptual model narrative.
Comments	While not stated as a testable hypothesis, the proposal does describe the general assumption that a program of systematic fallowing of rice field habitat may adversely [effect] the viability of giant garter snake populations in the Sacramento Valley. The proposal then describes several possible ways in which giant garter snakes may respond. Mark and recapture of snakes and radio telemetry tracking of snakes are proposed to track snake movements in response to fallowing and to evaluate snake habitat utilization in agricultural areas and wetland restoration sites. This will generate useful, baseline information.

Approach

Rating	fair
	The proposal describes its approach, including study design and methodology, fairly well. It includes a detailed description of methods that will yield important information about the biology, distribution and demographics of giant garter snake populations. However, the proposal lacks detail regarding rice fallowing practices. The proposal states "In the first

year of this study we will monitor snake movements under normal rice growing conditions. In the second year of the study the rice fields will be fallowed and we will evaluate snake movements in relation to these conditions." There is no description of what constitutes the controls and the treatment areas; criteria for site selection; acres and spatial distribution of fallowed rice lands and duration of fallowed fields. I have doubts whether the proposed study design will be able to establish cause and effect relationships between the action of fallowing rice fields and snake responses. The proposal should have acknowledged the difficulties of conducting this kind of field experiment and whether causality could be discerned within the period of this project.

There is only a vague reference to site selection in coordination with the EWA ("Potentially other sites may be identified through enrollment in the Environmental Water Account Program."; p. 2). There is also only a mention of the USFWS Biological Opinion (BO) for the EWA (p.1). The proposal would have been stronger if it had incorporated more information from the EWA BO and Action Specific Implementation Plan (ASIP) regarding EWA program impact analysis of rice idling; giant garter snake conservation strategy; research needs; and conservation measures for the giant garter snake. This information would also be relevant for the section on CALFED Program Goals and ERP priorities. The proposal does not include a description of methods to identify habitats and classification systems that will be used. The approach is appropriate for meeting the objectives of getting better information on the biology of the giant garter snake. I have less confidence in information

that may be generated about the ecosystem and agricultural system to which the project will contribute. I'm not confident there will be practical information emerging from this project that will be useful for framers, cooperating agencies, NGOs and decision makers. As stated above, the proposal describes only in general terms that information could be used to develop guidelines for water sales and rice land fallowing that will minimize adverse effects on giant garter snake.

Feasibility

Rating	fair
G	The proposal appears to be technically feasible (for some of the objectives) within the proposed timeline; however, the proposal lacks some important details, as described above.

Performance Evalutation

Rating	poor
Comments	The description of performance evaluation is poor (p. 5). The proposal states that performance is primarily measured by research products. It appears minimal effort went into writing this section of the proposal. The proposal could have been strengthened by describing criteria to test hypotheses and performance measures that are supported by a conceptual model.

Proposed Outcomes

Rating	fair
Comments	The proposal doesn't have much detail on proposed
	outcomes and practical information that will be useful
	for framers, cooperating agencies, NGOs and decision

makers. As stated above, the proposal describes only in general terms that information could be used to develop guidelines for water sales and rice land fallowing that will minimize adverse effects on giant garter snake. There is some critical information lacking regarding experimental design components, e.g. controls and the treatment areas; criteria for site selection; acres and spatial distribution of fallowed rice lands approach and how the information would be useful in terms of integrating agricultural activities with ecosystem restoration. The proposal does state that data and other information will be provided to USGS and DFG and that information will be disseminated to the public via a workshop and a web site.

Capabilities

Rating	good
	The applicant has good capabilities of doing the technical work associated with the biology, distribution and demographics of giant garter snake populations. These objectives are the strengths of the proposal. On the other hand, it appears the proposal will yield information value that is limited to giant garter snake biology and there will not be much practical information generated that will be useful for framers and decision makers. Some critical components were not included in the proposal, as described above.

Cost-Benefits

Rating	poor
	The funding request is \$1,187,367 dollars. I think the budget is unreasonable because it is too high for the work proposed and because the benefits in terms of information value of the project are limited. Task 3 is to establish a web page (p. 4) at a cost of \$18,101.82. I think this is exorbitant and is a task that

could be deleted. There is only two sentences describing Task 4 (p. 5) which is to host a workshop, make management recommendations (presumably on how to integrate agricultural activities with ecosystem restoration) and disseminate information. Task 4 should have been described in greater detail (e.g. stakeholder and public outreach strategy) and is one of the more important aspects of the project.

Overall Evaluation Summary Rating

Rating	fair
Comments	This is only a fair proposal overall. There are definite strengths with respect to the capabilities of the applicant and approach to obtaining useful biological information on the giant garter snake. However, there are also serious weaknesses that would have to be addressed if this proposal were to be recommended for funding. Because giant garter snake is a high priority species of the CALFED Program, we might consider asking the applicant to revise and resubmit the proposal after addressing the deficiencies.

Proposal Number: 0086

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MANAGEMENT FOR WILDLIFE FRIENDLY FARMING

Applicant Organization: United States Geological Survey

Amount Requested: \$1,187,367

Goals

Rating	excellent
Comments	Yes to all questions. The website and workshop elements should be particularly helpful in informing farmers and assisting them to integrate their activities with the progress of the project and ERP goals.

Justification And Conceptual Model

Rating	very good
	The conceptual model is clear and justifies full-scale implementation of the project, but it is not stated in the format of testing hypotheses. Hypotheses could be stated - e.g., that fallowing of rice fields will significantly alter the movement patterns and home ranges of Giant Garter Snakes. However, I don't believe that kind of format is necessary to address the basic questions of the study and produce meaningful data.

Approach

Rating	excellent
Comments	

Yes to all questions. The study design is appropriate and uses state of the art methods for capturing, marking and tracking Giant Garter Snakes; for recording localities with GPS and mapping them with GIS software; and for statistically analyzing the data with appropriate multivariate techniques. Information richness is high with regard to both the ecosystem and agricultural system, and the results definintely will make a significant contribution to the knowledge necessary for integrating agricultural practices with ecosystem restoraton.

Feasibility

Rating	excellent
Comments	The project is entirely feasible with a high likelyhood of success. Envrionmental compliance and permitting requirements are fully addressed. The only issue that is not specifically addressed is contingencies regarding the possible occurrence of natural conditions such as drought or flooding. However, because the proposal authors are very familiar with the enviornmental and agricultural systems of the Sacramento Valley, they may believe that there is little chance of such conditions substantially impairing the study.

Performance Evalutation

Rating	very good
Comments	By its design, the project is self-monitoring and descriptive rather than hypothesis testing. Performance will be based on research products (locality data base, habitat maps, reports, website, etc.) which are reasonable, based on the conceptual model, and will support the management actions to be recommended.

Proposed Outcomes

Rating	excellent
Comments	Yes to all questions except the last, which refers to how the data will be stored and made available to others. Electronic storage in the USGS's National Biological Information Infrastructue and CDFG's NDDB and BIOS programs will make the data readily available to biologists in federal and state agencies, academic institutions, and private consulting companies. The website, workshop and peer-reviewed publications will provide the information to an even wider audience of stakeholders and interested individuals. While the project deals mainly with the impacts to the Giant Garter Snake of fallowing rice fields, the study of existing GGS restoration areas will provide important information for managing wildlife refuges and other wetlands to ensure the maintenance of appropriate habitat for this species.

Capabilities

Rating	excellent
	Yes to all questions. Both team members are professional biologists employed by the highly respected Biological Resources Division of the USGS. In addition to other species, they have been conducting research on the Giant Garter Snake for over 10 years and are very familiar with its habits and habitats. Further, they have considerable experience working with the private owners of agricultural lands in the Sacramento Valley and securing their cooperation in providing access for biological research. The project leader, Dr. Glenn Wylie, has a particularly impressive record of research and publication, much of it dealing with the GGS.

Cost-Benefits

Rating	excellent
	I don't have any experience with projects as large as this, but the budget looks reasonable to me.

Overall Evaluation Summary Rating

Rating	excellent
Comments	As the coauthor of the paper describing the Giant Garter Snake as a full species (Rossman, D. A. and G. R. Stewart. 1987. Taxonomic reevaluation of Thamnophis couchii [Serpentes: Colubridae]. Occ. Papers Mus. Zool. Louisiana State Univ. 63:1-25.), and one who has been concerned about the status of the GGS and other species of California herps for over 40 years, I believe that the proposed project is very much needed

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MANAGEMENT FOR WILDLIFE FRIENDLY FARMING

Applicant Organization: United States Geological Survey

Amount Requested: \$1,187,367

Goals

Rating	excellent
Comments	The proposal speaks directly to the general ERP goal of improving and increasing aquatic and terrestrial habitats and to improve ecological functions to support diverse and valuable species. In particular, it addresses the strategic goal of recovering endangered and other at-risk species. It does this by

Justification And Conceptual Model

Rating	very good
	The conceptual model is straightforward and appropriate, emphasizing the need for additional scientific field study to understand the impacts of land fallowing and other related and mitigating actions (wetlands, canals) on the giant garter snake. Methods include both mark and recapture and telemetry. The description of the conceptual model is short on detail.

Approach

Rating	excellent
Comments	The approach selects three sites that currently support populations of giant garter snakes, each is a priority area for the ERP (Butte Basin, Colusa Basin and Sutter Basin). It builds on prior research by the PI and other researchers. The methods of mark and recapture and telemetry appear to be appropriate for the study goals. Objective 1 is central to the goals of the ERP; objective 2 is related and will complement objective 1.

Feasibility

Rating	excellent
Comments	The PIs have extensive experience with this kind of research and field work. The time frame and research program seems highly feasible, especially given their skills and experience with this kind of study of the giant garter snake.

Performance Evalutation

Rating	very good
Comments	Performance measures for this kind of research must rely primarily on peer review of scientific articles. Little detail, however, is provided in the proposal on the specific performance measures or criteria and how adaptive management or adaptive research approaches will be implemented.

Proposed Outcomes

Rating	excellent
Comments	Appropriate outcomes are described in terms of the data collected, analyses, and statistical comparisons between treatment and control

situations. Dissemination includes a workshop, scientific journal articles, and a web page to provide information on the project.

Capabilities

Rating	very good
Comments	The PI has been studying the giant garter snake in the Sacramento Valley for 11 years. This work has produced many reports and informal publications on this topic, but only one publication (in press) for a peer reviewed journal (Conservation Genetics).

Cost-Benefits

Rating	very good
Comments	This is an expensive project due to the need for constant (daily) monitoring at several sites. The potential benefits, however, are also large. The understanding gained from this activity about giant garter snake behavior could facilitate finding ways to fallow land in the interest of protecting aquatic

Overall Evaluation Summary Rating

Rating	very good
	Many aspects of this proposal deserve the rating of "excellent"; in other cases "very good" was the appropriate judgment. In a couple of cases the proposal may have fallen short of "excellent" because the explanations provided in the proposal were too brief. Also, a stronger record of peer reviewed publications by the PI on this topic (or others) would have also supported the "excellent" rating.

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1. Applicability to ERP goals and regional priorities.

Partially fulfills objectives 2 and 3 for goal 1. The proposal will examine habitat preferences but does not demonstrate how it will examine giant garter snake demographics as stated.

notes:

The proposal specifically addresses the PSP project priority of assessing the effect of rice field water transfers on giant garter snake habitat. Research activities take place in Yolo, Sutter, and Butte Counties.

2. Links with other restoration actions.

Proposal both continues and expands Sacramento Valley giant garter snake initiative from USGS begun in 1995. It anticipates rice field fallowing as a result of several influences altering water availability in the future.

notes:

The panel feels that the proposal's objectives would be valuable regardless of the outcome of the EWA program. The use of flooded rice fields by the giant garter snake is important

to understand in the region as rice field conditions continue to fluctuate as dictated by market conditions and government policies.

3. Local circumstances.

Land owner permission access lands not obtained which may constrain the proposal to public lands. Landowner support in this program is questionable.

notes:

The proposal does not provide sufficient detail on the proposed areas of study and the access to these areas.

4. Local involvement.

Land owner permission access lands not obtained which may contrain the proposal to public lands. Web page and workshop planned as outreach; however, proponents should contact stakeholders directly not passively with web page and workshop.

notes:

5. Local value.

Potential for wetland restoration.

notes:

Tracking the movement of snakes from canals to flooded fields

could yield important insights into habitat management. Panel raised questions about demographic data collection and sampling methods.

6. Applicant history.

Yes, but performance specific to CALFED unknown.

notes:

Members of the panel questioned if USGS is the best agency to connect data on giant garter snake habitat use to rice growers.

7. Summary of Overall Panel Discussion and Review

The proposal is tightly constructed and well-prepared. The panel felt that the project will provide valuable information for guiding future restoration and conservation activities as they pertain to managing rice farms and surrounding natural habitats for GGS. There was some concern, however, that the project will not provide immediate on-the-ground benefits and that it may lead to a single species management approach that may not maximize benefits to basin ecosystems as a whole.

Some panel members felt the funding request is large given the scope and potential impact of the project. However, the proposal is well-connected to the goals of the PSP project priorities in terms of GGS research and conservation.

8. Panel Quality Ranking

Excellent

notes:

9. Regional Priority Ranking

Very High notes:	Ü	

Environmental Compliance Review

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Applicant Organization: United States Geological Survey

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

Yes.

- 2. Is compliance with National Environmental Policy Act (NEPA) required for this project? **Yes.**
- 3. Does this project qualify for an Exemption or Exclusion under CEQA and NEPA, respectively?

Yes.

Comments

This is a research project.

4. Did the applicant correctly identify if CEQA/NEPA compliance was required? **No.**

Comments

The applicant checked off no compliance was required.

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

No.

- 6. Has the CEQA/NEPA document been completed?
- 7. If the document has not been completed, did the applicant allot enough time to complete the document before the project start date?

Environmental Compliance Review

Yes.

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

Yes.

Comments:

Although no funds were allotted for environmental compliance, the documents that may be required wont require large fees if any.

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

Comments:

The applicant has obtained the proper federal permits but do not state if any state permits were obtained. The giant garter snake is a state listed species and DFG will need to be consulted and a permit will need to be issued to collect the snake.

Identify those additional permits that may be needed by this project:

MOU with CDFG

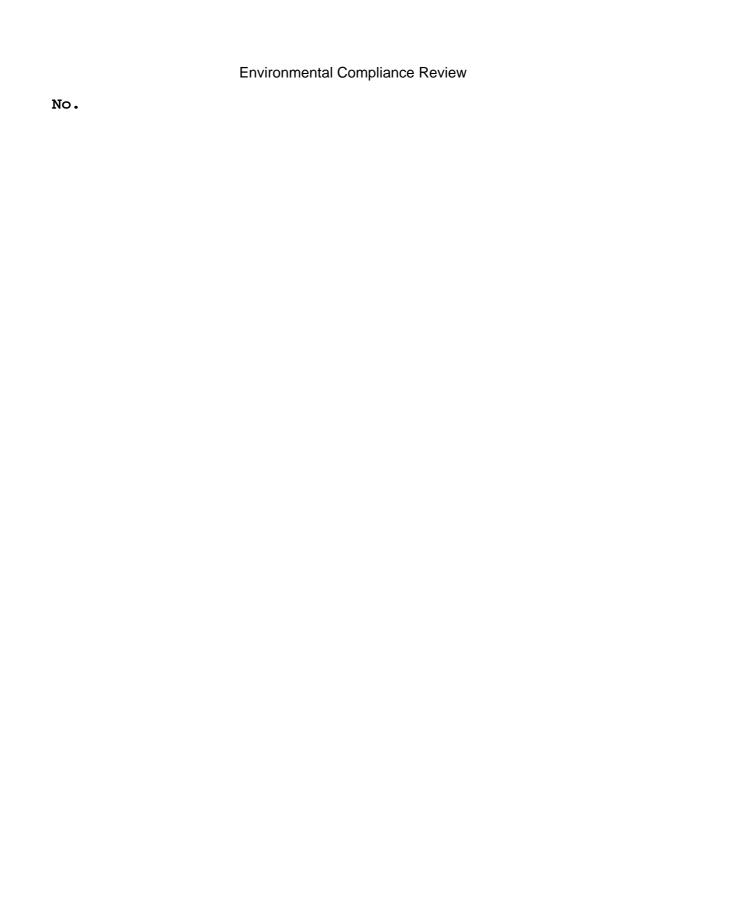
10. Does the proposal include written permission from the owners of any private property on which project activities are proposed or, if specific locations for project activities are not yet determined, is it likely that permission for access can be obtained?

Yes.

Comments:

The applicant states permission has been obtained from Wildlands Inc. Permission will be granted from other participating landowners before project.

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?



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

Yes.

2. Does the Budget Form include a detailed budget for each task identified on the Task and Deliverables Form and in the proposal text?

Yes.

3. Are the costs associated with each task and deliverable reasonable costs for performing the services?

No.

If no, please explain:

The overhead rate applied to costs for subcontracted tasks should not have the full 42% markup that the grantee uses for their labor, should be 3-5% markup. For the grantee, the overhead rate of 42% and the benefit rate of 35% means that their labor is marked up a total of 77%. Task 2 the benefits drop to 20%. Why?

4. Is each person (employee, consultant, subcontractor, etc.) identified on the Personnel Form also included on the Budget Form?

Yes.

5. Are there estimated hours and an associated hourly rate of compensation for each person identified on the Personnel, Tasks and Deliverables, and Budget forms?

Yes.

6. Does the budget include the benefit rate for all personnel identified on the Personnel and Budget forms?

Yes.

If no, please explain:

35%

7. Are the proposed labor rates comparable to state rates?

No.

If no, please explain:

They are federal GS pay rates.

8. Is more than 25% of the work proposed to be performed by subcontractors?

No.

9. Are project management expenses appropriately budgeted?

Yes.

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

No.

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

No.

12. For equipment >=\$5,000, was a separate worksheet filled out? Please note: No overhead or indirect rate charges are allowed on the equipment purchases

No.

13. Is the purpose for all travel clearly represented in either the proposal itself, or in the Tasks and Deliverable Form?

Please note: Recurring travel costs for a specific task or subtask may be combined into one

entry on the Budget Form, but the number of trips and cost for each trip must be clearly represented.

No.

14. Are travel and per diem at <u>rates specified by the California Department of Personnel Administration</u> for similar employees?

No.

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

Yes.

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

Equipment & Vehicles - USGS

16. If the applicant identified cost share or matching funds, are they also described in the text of the proposal?

Yes.

17. 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 negotiation a grant agreement?

No.

If no, please explain:

No exception to the std T's &C's.

18. Are there other budget issues or "red flags" that warrant consideration?

Yes.

If yes, please explain:

The cost share and the success of the project depend on the good working order of the equipment and vehicles. It is the responsibility of the grantee to ensure the equipment and vehicles are in good working order. It is not the granting

agencies responsiblity to fund replacment of equipment and vehicles that become inoperable.

19. Provide revised amount requested based upon your review: \$