

CALFED Science Program PSP Grant

Supplement Proposal

Technical Selection Panel Review

Grant Supplement Identification: *Mangel*

Applicant Organization: University of California, Santa Cruz

Grant Supplement Title: Life History Variation in Steelhead Trout and the Implications for Water Management

Original Grant (Year): Life History Variation in Steelhead Trout and the Implications for Water Management (2004)

Review

The following review form has been broken down into three subsections: (1) technical review criteria, (2) value added review criteria, and (3) funding recommendation. It includes a review and summary rating for each of these subsections using all review criteria. Technical criteria is separated from the value added criteria because these issues will be weighed separately, but with equal importance. No supplement proposals will be funded that are rated inadequate in either criteria.

Subsection 1: Technical Review

Review about the technical merit of the supplement proposal. Criteria for consideration are:

Technical Review Criteria

- ***Purpose:*** *Are the goals, objectives and hypotheses of the supplement proposal clearly stated and internally consistent?*
- ***Background:*** *Is the underlying basis for the supplemental work clearly explained and well documented?*
- ***Approach:*** *Is the approach to the supplemental work well designed and appropriate for meeting the objectives of the supplemental project? Is it clear who will be performing supplemental tasks including management and administration of the project and are resources set aside to do so?*
- ***Feasibility:*** *Is the approach for the supplemental work fully documented and technically feasible? What is the likelihood of success? Is the scale of the project consistent with the objectives and within the grasp of authors?*
- ***Budget:*** *Is it clear how much each aspect of the supplemental work will cost including each task, salaries, equipment, etc.? Is the budget reasonable and adequate for the work proposed?*

- **Qualifications:** *Is the project staff qualified to efficiently and effectively implement the supplemental project? Do they have available the infrastructure and other aspects of support necessary to accomplish the project?*
- **Past Performance:** *Unless informed otherwise by CALFED staff, reviewers should assume that the applicants have met the commitments indicated on their existing CALFED grant/contract.*

Technical Review Summary

The technical review of this supplement proposal is provided in the space below and addresses each of the technical review criteria (above), including strengths, weaknesses, and specific reasons supporting the evaluation.

The PI proposes continued support of their efforts to demonstrate the role of life history variation as critical to conservation of Steelhead in California. The current award has demonstrated fundamental differences in forage, growth and migration thresholds between coastal stream and Central Valley (large riverine) populations. They are using this information in initial specific dynamic programming simulations. In the current award, and this supplementary request, the PI does an admirable job in linking theory to practical considerations: relating flow, growth environments, and life history consequence to conservation of threatened steelhead populations.

New elements proposed include (1) Increased empirical efforts to link flow to forage conditions; (2) telemetry of juveniles in American River; and (3) sampling of emigrants in coastal lagoons. At the same time, no new experiments are proposed (in the current award these experiments entail collaboration with NMFS scientist S. Sogard). The drift sampling for prey items is difficult and obtaining samples across flow regimes as proposed would deem additional resources and sampling as requested. The other two goals are related to estimating time (size) of emigration for the two different systems, which apparently is a critical determinant in relating growth conditions to life history type across systems. For telemetered fish in the American River, there is an issue of relating growth or condition to emigration as growth cannot be a controlled variable in the field. Similarly it is unclear how fish in lagoon environments will be compared to resident coastal stream fish – size, age, growth? Still, additional information on the size of emigrants may improve the life history model. The budget seems reasonable and the proposed work feasible.

Technical Rating Criteria

Rating of the technical merit of the supplement proposal based on the following scale:

- **Superior:** Outstanding in all respects with no technical concerns. Complete confidence proponents will accomplish the project goals.
- **Above Average:** A very good proposal with no significant technical concerns. Very confident proponents will accomplish the project goals.
- **Sufficient:** A reasonable proposal with some technical deficiencies but nothing critical. Fairly confident proponents will accomplish most of their project goals.
- **Inadequate:** A technically deficient proposal with serious impediments or concerns. Little confidence proponents will accomplish many project goals.

Please **X** the appropriate technical rating:

_____ Superior
 ___**X**___ Above Average
 _____ Sufficient
 _____ Inadequate

Explanation of rating and additional comments:

Additional elements could provide important information without performing new experiments.

Subsection 2: Value Added Review

Review about the value added of the supplement proposal. Criteria for consideration are:

Value Added Review Criteria

- **Purpose:** *Is the new study justified relative to existing knowledge? Are new results likely to add to the base of knowledge? Is the supplemental project likely to generate novel information, methodology, or approaches? Is it clear how the purpose of the supplemental work differs from the work in the existing grant/contract?*
- **Relevancy:** *Is it clear how the supplement proposal evolved from and relates to the existing grant/contract? Does the supplement proposal clearly and directly address one or more of the objectives/priorities in the existing grant/contract? Does the supplement proposal identify new relevancies to CALFED priorities not identified in the existing grant/contract?*
- **Timeliness:** *Does the supplement proposal clearly illustrate the need for immediate funding before the next Science Program PSP cycle (1 to 2 years)?*
- **Approach:** *Is it clear how the approach of the supplemental work differs from and adds to the work in the existing grant/contract?*
- **Products:** *Are products of value likely from the supplemental project that differ from those proposed in the existing grant/contract? Is there a plan for widespread and effective dissemination of information gained from the supplemental project?*
- **Budget:** *Is it clear that supplemental funds are going to new or revised tasks or equipment relative to those proposed in the existing grant/contract? Considering the amount of funding requested in the proposed budget, is there a high value in terms of knowledge gained for the CALFED Program relative to other proposals you are familiar with (i.e. “bang for the buck”)?*

Value Added Review Summary

The value added review of this supplement proposal is provided in the space below and addresses each of the value added criteria (above), including strengths, weaknesses, and specific reasons supporting the evaluation.

The link to flow would seem critical in the rationale for investigating life cycle dynamics. The comparison between watershed types, which were historically low and high-flow environments seems particularly well justified given what the PI has learned of growth and life history differences between coastal (low flow) and Central California (high flow) watersheds. Thus, there is compelling reason to continue to contrast the role of flow on growth environments (forage conditions) using contrasts between the two systems as a “natural experiment.” The examination of juvenile emigration using telemetry could have merit, particularly as this effort is already receiving support and cooperation from another CALFED funded project (Klimley). Here, though (if we understand the project correctly) the issue is what are the attributes—size, age, condition, past growth rate—of emigrating juveniles and there is little in the proposal that explains how these important variables will be measured and contrasted with residents. Similar concerns exist for the lagoon survey work in the coastal stream systems. There is high certainty that the PI will contribute new concepts to understanding the role of flow on growth environments and life history outcomes of steelhead. There is also compelling evidence that there is a timeliness factor in sustained efforts to quantify forage in rearing habitats and take advantage of an ongoing telemetry effort throughout the Sacramento River, Delta, and San Francisco Bay system. The budget is well integrated with ongoing efforts and is reasonable for the scope of work.

Not enough people are doing work like this and it is interesting—and needed.

The big issue is that it seems they are asking funds for another 6-8 months for additional data collection and analysis to make work more polished. The bang-for-the-buck is marginal; it seems to be simply a little more work and information for a little more money.

Value Added Review Rating

Rating of the value added merit of the supplement proposal based on the following scale:

- ***Superior:*** Outstanding scientific value with a pressing need for immediate funding and expected to add substantial new thinking/concepts to our knowledge/understanding on one or more highly relevant CALFED topics for a very reasonable supplemental cost.
- ***Above Average:*** At least high scientific value and a clear need for rapid funding. Expected to add solid basic new thinking/concepts to our

knowledge/understanding on one or more highly relevant CALFED priority research topics for a very reasonable supplemental cost.

- **Sufficient:** A supplement proposal with a fair amount of scientific value and need for timely funding and expected to add some basic new thinking/concepts to our knowledge/understanding on one or more adequately relevant CALFED topics for a reasonable supplemental cost.
- **Inadequate:** A supplement proposal that has little scientific value or need for timely funding. Not expected to add significant new thinking/concepts to our knowledge/understanding on relevant CALFED topics or the supplemental cost is unreasonable for the knowledge gained.

Please select the appropriate rating with an **X**:

Superior
 Above Average
 Sufficient
 Inadequate

Explanation of rating and additional comments:-

There is high certainty that the PI will contribute new concepts to understanding the role of flow on growth environments and life history outcomes of steelhead. The big issue is that it seems they are asking funds for another 6-8 months for additional data collection and analysis to make work more polished. The bang-for-the-buck is marginal; it seems to be simply a little more work and information for a little more money.

Subsection 3: Funding Recommendation and Justification

Funding recommendation for this supplement proposal and a justification of this recommendation.

Select one of the following three funding recommendations with an **X**:

Fund in Full
 Fund with modifications
Suggested Funding Amount \$ _____
 Do not fund

Justification to recommendation. If the recommendation is to fund with modifications, modifications the applicants must make in order to receive funds are listed.

The panel recommends that this proposal be funded as the additional elements could provide important information without performing new experiments.