

CALFED Science Program PSP Grant

Supplement Proposal

Technical Selection Panel Review

Grant Supplement Identification: *Kimmerer, 1*

Applicant Organization: San Francisco State University

Grant Supplement Title: Foodweb Support for the Threatened Delta Smelt and Other Estuarine Fishes in Suisun Bay and the Western Sacramento-San Joaquin Delta.

Original Grant (Year): Foodweb Support For The Threatened Delta Smelt And Other Estuarine Fishes In Suisun Bay And The Western Sacramento-San Joaquin Delta (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 PIs request support for an additional field season to estimate with greater resolution the carbon budget (sources and sinks) within the Low-Salinity-Zone of the San Francisco Estuary. The underlying premise is that this zone is critical in the early life history stages of the anadromous Delta smelt and other estuarine fishes, although this is not the subject of the awarded or proposed work. Rather the project is driven by anomalously low primary productivity in this zone (compared to other estuaries) and the role invasive bivalves and freshwater flow have. The proposal builds on a large multi-PI award that simultaneously investigates multiple trophic levels and their interactions in evaluating the dynamics of carbon flow within the LSZ. The PIs identify several unanswered questions specific to the LSZ: (1) What is the role of river subsidies? (2) What are sources and sinks within the foodweb? (3) What underlies zooplankton production? (4) What is the role of the HAB *Microcystis*?

The PIs have been making noteworthy progress on the aims of the original project, noting that river subsidy may be a minor, but important portion of primary production. But they have uncovered a mismatch between microbial demand and in situ carbon projection within the LSZ prompting this supplemental request, suggesting that they need to revisit their LSZ carbon budget with greater temporal resolution than their initial box model provided. The Panel found the presentation of results to date rather rushed and confusing, and while we appreciate the dilemma of trying to decide what to include in restricted space, found it frustrating not to see more clearly how hundreds of stable isotope analyses would feed into foodweb efficiency studies. Why are they measuring DOC uptake by *Corbula*? It does not seem like an essential piece of the proposal.

A two-week summer field project requested, which like past studies will measure multiple potential sources, sinks and foodweb transformations in the LSZ. The power analysis in the ability to detect rates through the box model was a commendable aspect justifying this supplemental work. The project is divided among a diverse set of PIs across multiple institutions. Although their qualifications are top notch, there has to be concern about how well fieldwork and products can be coordinated. Budget request does not seem strategic; it appears to be spread equally among the PI's.

The funding would pay for an intense sampling period.

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
 Above Average
 Sufficient
 Inadequate

Explanation of rating and additional comments:

The project addresses an ambitious ecosystem construct highly relevant to interactions between the Delta and downstream estuarine environments. With limited resources available to supplemental awards (\$300,000), some concern exists that the PI s have opted to maintain a pre-existing division of labor, when a more targeted approach emphasizing work to certain group(s) might be more efficient.

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 new work is well justified, building on the current award but engaging new questions. In large field campaigns such as this, it is often advantageous to have several years to draw upon, particularly in generalizing carbon and nitrogen flows, and capturing foodweb dynamics. There are novel elements in the supplemental request that will add value to the large body of information already collected. These include increased temporal resolution in the field, a directed question that looks at the apparent mismatch between carbon demand and supply in the LSZ, and the role of *Microcystus*. Further, this is a coordinated and complex project relying upon team dynamics requiring a certain level of momentum. This too argues for some sustained funding for the group as they work through products from the original award. The budget is reasonable, but there are concerns about its division among so many groups and PI s (see above).

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.

