

Draft Individual Review Form

Proposal number: 2001-K208-2

Short Proposal Title: Evaluation of Central valley
Floodplain fish rearing habitat and potential losses from
stranding

1a) Are the objectives and hypotheses clearly stated?

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

The hypotheses are reasonably clear.

1b1) Does the conceptual model clearly explain the underlying basis for the proposed work?

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

Although the hypotheses of the proposed study are fairly clear, the conceptual model is weak. It is based on the assumption that floodplain rearing and standing are important population controls in the Yuba and Feather Rivers because salmonids are confined to the lower reaches of those rivers. This is not necessarily correct—these losses may have little population effect if density dependence is a major factor for juveniles (likely). The conceptual model would be more effective if it placed this assumption in the context of the overall life cycle of each of the target organisms, or at least a model of the key factors within this portion of life cycle or geographical region.

1b2) Is the approach well designed and appropriate for meeting the objectives of the project?

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

The methods for achieving several objectives are very weak or, in a couple cases, redundant with existing sampling programs. Specific examples include:

Hypothesis A2 (fish growth): The applicant proposes parallel monitoring of fish sizes on the floodplain and the adjacent river. This is not sufficiently rigorous because the populations in the two locations are “open”. Floodplain fish may migrate to and from the river channel and visa versa. Moreover, each location is open to immigration of individuals from upstream. Hence, measurement of fish sizes will be continually confounded by these movements. There are alternative approaches to help deal with these problems (eg fish tagging, otolith analysis), but these have not been proposed by the applicant.

Hypothesis A3 (poor habitat conditions on floodplain): This hypothesis will be examined by simply determining the number and composition of predators. The presence or absences of predators alone does not indicate habitat quality—the proposed approach is too ecologically narrow. For example, very high quality habitat could potentially improve abundance of both prey and predators.

Hypothesis A4 (distribution of steelhead rearing): This question is already being addressed in detail by DWR, who are doing a comprehensive study of steelhead distribution in the lower Feather River. The methods proposed by the applicant are weak in comparison.

Hypothesis A5 (lower river spawning of splittail): The presence of splittail in the lower Feather River is already known, so this will not provide much useful information. Moreover, the proposed method will not address the issue of the relative importance of different river reaches for splittail. Comparison of upstream screw trap data to different methods proposed (by the applicant) for the lower river floodplain does not provide a reasonable basis for comparison.

Hypothesis B (floodplain stranding): The basic approach here is to assemble biological data from fish sampling and compare this information to physical data. The methods are poorly defined and likely to be ineffective. There may be substantial variability in sampling efficiency between different habitats, so it may be difficult (or impossible) to determine densities of stranded fish in different areas. With the exception of gage data, the types of physical data that will be collected are poorly defined.

Hypothesis C (population significance of floodplain rearing): This is especially weak. The major assumption here is that faster growth will result in increased survival. In many ecological settings, faster growth does not guarantee better survival. Hence, the model is conceptually flawed without supporting evidence. A more direct approach is needed to address the survival issue. Moreover, the proposed modeling methods are highly questionable given: 1) the confounding population effects of hatchery stocking of salmon in the region and 2) the model will rely on salmon population data from many miles upstream, which may not reflect abundance in the floodplain reach.

Hypothesis D (restoration potential): Preliminary conceptual design of possible restoration projects is a worthy effort. However, the proposed methods do NOT address whether these improvements will have a substantial fisheries effect. The proposed methods skip hypothesis testing altogether and move directly to restoration. This is not a reasonable approach.

1c1) Has the applicant justified the selection of research, pilot or demonstration project, or a full-scale implementation project?

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

Moderately well.

1c2) Is the project likely to generate information that can be used to inform future decision making?

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

I question whether the proposed study will provide useful information for decision making. Many of the questions that the applicant hopes to answer have already been at least partially addressed in other locations. Based on studies in the Cosumnes, Yolo Bypass and Sutter Bypass floodplains, we now understand that floodplain is important habitat for fish, but that some fish are lost due to stranding mortality. I do not believe the proposed study will add significant new information, at least with the proposed methods.

2a) Are the monitoring and information assessment plans adequate to assess the outcome of the project?

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

No. See previous comments about the problems with the monitoring program.

2b) Are data collection, data management, data analysis, and reporting plans well-described, scientifically sound and adequate to meet the proposed objectives?

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

No. See previous comments.

3) Is the proposed work likely to be technically feasible?

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

At least half of the proposed study is technically feasible. See previous comments about which study components are of concern.

4) Is the proposed project team qualified to efficiently and effectively implement the proposed project?

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

The field crew appear to have good qualifications but it is questionable if there is sufficient manpower to tackle complex and variable habitats such as floodplain. It is unclear whether the team has sufficient expertise in the area of fish life cycle modeling, one of the key project tasks.

Miscellaneous comments

[Note: in the electronic version, this will be an expandable field]

Floodplain is a worthy area of study, however the proposal is a rather unfocused mix of research, monitoring, geomorphology, modeling and restoration design. I believe the proposal would have been more effective if it concentrated on just a few of the (excessively) numerous hypotheses.

**Overall Evaluation
Summary Rating**

- Excellent
- Very Good
- Good
- Fair
- Poor

Provide a brief explanation of your summary rating

[Note: in the electronic version, this will be an expandable field]
