

## Draft Individual Review Form

**Proposal number:** 2001-K220-2

**Short Proposal Title:** Reintroduction of Native Salmonids in Central Valley Headwaters.

### **1a) Are the objectives and hypotheses clearly stated?**

Yes – The authors clearly state their goal of conducting comparative biological, engineering, and social/political analyses to evaluate steelhead and spring chinook passage around 11 large Central Valley Rim dams. The proposal lists five hypotheses that address the quantity and quality of potential upstream habitat, the degree of habitat protection afforded by patterns of landownership, feasibility of engineering solutions, effects of restored passage on long-term fish population status, and the feasibility of the proposed research project. Their consideration of social/political as well as biological and engineering ramifications of fish passage restoration issues impressed me. In Hypothesis #3, the authors alluded to, but did not explicitly address, the need to evaluate smolt emigration through the impoundments. Will the engineering solutions they evaluate be limited to passage facilities at the dams or will they also generate information to assess potential smolt survival in the large lakes created by the dams (see Jepson et al. 1998. Survival of radio-tagged Atlantic salmon and trout smolts passing a reservoir during seaward migration. *Hydrobiologia* 371/372: 347-353.).

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

Yes, but Figure #2 and narrative could have included more detail about controlling factors, structure and functions that relate specifically to restored passage around the dams. For example, the illustration and description of Conceptual Model Panel #3 could list some of the controlling factors (hydrology, channel geomorphology, and land use), structure (spawning habitat, rearing habitat, and riparian vegetation), and functions (egg, fry, and smolt survival) associated with restored passage. I have no doubt, however, that the authors appreciate the complexity of their proposed project and the list of tasks in Figure 5 is quite detailed and complete.

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

Yes – The proposal describes a progression of steps from a broad evaluation of 11 dams to detailed assessments of 3 dams. An advisory committee guides the project, which is in turn administered by three working groups studying the biological, engineering, and social/political aspects of creating passage around dams. All phases of the project will attempt to summarize existing information about each dam/river system and generate new data based on detailed analyses. Again, Figure #5 *Tasks, Schedule, and Product/Outcome*, illustrates the depth of this planning effort.

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

Yes, there appears to have been little serious study to date on creating passage at the dams selected by the authors. Creating passage and restoring populations of steelhead and chinook to headwaters seems a worthy area of research given the ERP and CVPIA goals of increasing natural production in Central Valley watersheds. The proposed project is designed to complement but not create duplicative information generated through CALFED's Fish Passage Improvement Program.

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

Yes, the overriding goal of this proposed project is to inform future decision making. The results of analyses for each dam will weigh biological and social costs and benefits of re-establishing fish populations and modifying dam operations. The results or their assessments will likely be transferable to the evaluation of other river systems and the planning process they propose could serve as a model for future research efforts. The potential to inform future decision making is the strongest attribute of this proposal.

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

Because the proposal does not involve the implementation of a restoration project, it does not include a specific monitoring plan. However, the structure of their planning and assessment methods includes review by an advisory committee and CALFED staff (Figure 5 items 4b and 4c). It appears that assessment methods, interim reports, and final reports will be adequately reviewed and revised. The schedule in Figure #5 clearly illustrates stages of the project when review is necessary.

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

The proposal lists major types of data collection for different assessments that will be conducted on each river system/dam and briefly describes data collection methods. The major topic areas for detailed assessment of each dam (interviews with stakeholders, upstream habitat assessments, upstream fish population and hatchery issues, downstream issues/constraints to fish passage, fish passage options, reservoir migration issues, upstream habitat productivity, potential funding sources, and political feasibility) seem appropriate. The use GIS and US Army Corps of Engineers Water Resources Assessment Methodology are mentioned but other analysis techniques are not described. Data management through preparation of written reports appears adequate. The posting of reports on a web site and preparation of GIS maps seems to satisfy reporting requirements.

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

The research and planning process proposed by the authors is technically feasible. Developing passage around many of the dams they are investigating may not be technically feasible but the proposed project is designed to address that issue.

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

The team is exceptionally qualified to implement the project. Members include professional planners, biologists, and engineers with specific knowledge of California water issues, Central Valley anadromous salmonids, and fish passage design. Two of the principal investigators have held high-ranking positions in the California Department of Water Resources and California Department of Fish and Game. The engineering and biological staff of Harza Consulting has worked extensively on fish passage issues in the Pacific Northwest and California.

**Miscellaneous comments**

None

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**Overall Evaluation  
Summary Rating**

- Excellent
- Very Good
- Good
- Fair
- Poor

**Provide a brief explanation of your summary rating**

I was impressed with the scope of the proposed research and organization of the project. Biological, engineering, and social/political issues must all be considered to evaluate the feasibility of restoring steelhead and chinook populations to habitat above Central Valley dams. The proposal describes an impressive list of assessments for each dam/river system that should greatly facilitate other CALFED planning and restoration projects.

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