Draft Individual Review Form

Proposal number: K-208-1 **Short Proposal Title:** Evaluation of Central Valley Floodplain Fish Rearing Habitat and Potential Losses from Stranding

1a) Are the objectives and hypotheses clearly stated?

Yes, the objectives are listed as the purpose(s) of the study on pg. 3 and the hypotheses are listed in bold type on pgs. 4-6. Hypotheses are generally clearly stated, though a couple are involved/complicated and may to be answered adequately given the methods as described (e.g. Hyp. B2, C1).

Hypothesis B2: Lists seven factors (terms are general and could represent more) that could increase potential for stranding 3 species. It may be difficult to address all factors adequately.

Hypothesis C1: Since all species are unlikely to be collected in numbers during the same survey periods only two weeks will be available to assess APPARENT growth for each species in each habitat. This may not be enough time. It can also be confounded by fish migration in channel edge habitats and possibly isolated in floodplain habitats: larger fish in channel habitats migrate, but are confined in floodplain habitats.

Hypothesis C2 isn't very useful as written. "Predation and stranding in floodplain habitats leads to poor overall survival and reduced smolt production than would otherwise occur." Otherwise under what conditions? This is either an inter-annual comparison, which should be done once inundation and stage height relationships are established by proposed mapping, or it simply begs the question: if the floodplain dries up fast everything dies, if it dries up slow stranding is reduced and predation needs to be quantified. Accounting adequately for predation is more involved than capturing and looking at stomach contents of predator sized fish and birds, not mentioned, will have a significant impact. Fish on fish predation should sample when feeding is most likely to occur, early and late in the day.

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

The "conceptual models" adequately explain the underlying basis for the proposed work. What follows are my summaries of the conceptual models and the rationale for the proposed work (my rationale is somewhat different from that of the proposal): Model A.) little is generally known of the fish use of floodplains in the lower Feather and Yuba rivers and preliminary surveys should be done to identify species use and timing (adequately addressed by this proposal, but not comprehensive); Model B) fish are stranded in both man-made and natural floodplain topographic formations and such formations need to be sampled for fishes to determine the effort necessary to fully address the stranding problem and design solutions (possibly well addressed by this proposal, but details of mapping scale, maps available and numbers of fish samples to be collected per formation were not provided); Models C&D) we are just beginning to identify and quantify the benefits and impacts to floodplain rearing (this proposal may identify some new benefits and impacts; approaches implemented in the field (i.e., time of predator sampling, number of samples and timing of samples in relation to migration within each habitat etc.) and to some degree circumstances (i.e., floodplain inundation and duration) will determine if quantification is possible and plausible (reasonable estimates of fish within and exiting sampling region).

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

The approach appears sufficient to meet the "survey" level objectives: what fish use floodplain habitats, what habitats are used and what conditions lead to stranding. I was lacking the information on effort and funds directed at each hypothesis/objective (only Figure 3 was available on the web). I can not evaluate the sufficiency of additional information (e.g. screw trap data) to determine if growth, survival and competition hypotheses are be adequately addressed.

Even if the present level of effort is not sufficient to provide definitive answers, it will be necessary to plan a definitive study (sampling variability will be high, so information on sample sizes required to detect differences will be needed to support future funding requests). I suspect accurate quantification of chinook, steelhead and splittail use of and benefits from floodplain rearing will require a more detailed sampling design and much more effort in the field than proposed.

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

Yes, I believe that some preliminary mapping and fish sampling is necessary to begin to address some of the Hypotheses proposed; too many unknowns to begin pilot projects.

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

Yes, see comments in parentheses in 1b2.

2a) Are the monitoring and information assessment plans adequate to assess the outcome of the project?
Are sampling plans and methods adequate to assess the outcome of the project? No. However, this is often the case with preliminary surveys and is especially true when specific environmental conditions must also be present (i.e., floodplain inundation) for success. Sampling plans are minimal (number of field days and gear types used) and the sample area broad (over 35 miles). Crew size and lab support (larval fish identification for splittail) were not provided on the web site, so it is difficult to project what might be accomplished. The level of detail for mapping and means of selecting specific areas for fish sampling were not given

2b) Are data collection, data management, data analysis, and reporting plans well-described, scientifically sound and adequate to meet the proposed objectives?
Data to be collected will be useful and necessary to prepare for future work. The data will generally meet the project objectives, but may not adequately address growth, survival and competition contained in some of the proposed hypotheses.

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

Yes, but success in meeting survey level objective will be dependent upon floodplain inundation and the team's ability to conduct field work when conditions are suitable.

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]

All appear to have appropriate background and experience for their duties, and Cannon and Kozlowski are very familiar with the project area and fish species being targeted. Both appear to know the access points and land owners to contact.

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

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
☐ Excellent ☐ **Very Good** ☐ Good ☐ Fair ☐ Poor	I rated the proposal as very good, because it appears to address all the aspects of data collection I believe necessary to provide good answers, excepting possibly growth and survival. Presumably, the proposal emphasizes mapping and identification of floodplain habitats and their inundation thresholds, and fish sampling is somewhat reduced for that reason. That is how I would prioritize. Regardless, success will be determined somewhat by the weather and flows, and somewhat by the project's ability to sample when conditions are optimum.