Draft Individual Review Form

Proposal number: 2001-C202-2 **Short Proposal Title: Geomorphic Stream Restoration Demonstration project**

1a) Are the objectives and hypotheses clearly stated?
Objectives are not explicitly (and therefore, not clearly) stated but can be inferred through the hypothesis, and scope of work. It would be best to have clearly stated objectives to better understand the scope of work and to determine whether the scope of work is applicable to the objectives.

The hypothesis is clearly stated, though not necessarily in the traditional form of a null hypothesis. The statement of hypothesis is quite broad and to be tested, entails a number of monitoring activities not necessarily included in the proposed monitoring element.

1b1) Does the conceptual model clearly explain the underlying basis for the proposed work?
Project applicants misunderstood the nature of "conceptual model." They did not provide an explanation underlying the scientific basis for the proposed work, or an explanation identifying the ecological processes that now requires remedial actions, and the role of these actions in addressing the problems. Rather, within this section, project applicants explained the methodology of their project, including the use of several physical models they will be using.

1b2) Is the approach well designed and appropriate for meeting the objectives of the project?
The grading of the channels appears adequately described, but there are some concerns with the revegetation and monitoring elements.
The literature citations for their revegetation work are limited, and their experience in this field does not appear particularly strong. This reviewer suggests that their revegetation methodology be reviewed by others who have sufficient experience in the field, such as biologists associated with the Cosumnes Nature Conservancy or HART.
Monitoring elements do not appear to be adequate for the hypothesis stated. In particular, monitoring will not indicate whether there is an increase in the fall run Chinook salmon population. Also, two years worth of monitoring for the revegetation and fisheries elements may not be sufficient to ensure all planted vegetation remain viable for their establishment period, or to assess whether the project results in improved salmon spawning habitat for some period of duration longer than two years. References in the literature have suggested that a 5 – 7 year period of stability and maturity is needed for restoration projects before being able to gauge project success. In addition, it is not clear what pre-project data are available from the project area to be able to statiscally compare pre-project and post-project Chinook spawning use and success.
Finally, it would be good for the proponents to also seek experienced advice regarding the size of gravels that would be most useful to Chinook spawning within the project area. Only one, non-local, general and aged reference was relied upon in selecting gravel size.

1c1) Has the applicant justified the selection of research, pilot or demonstration project, or a full-scale implementation project?
The project is described as a pilot/demonstration project. Sufficient justification is provided for this selection.

1c2) Is the project likely to generate information that can be used to inform future decision making?
The project is likely to provide information that is useful for similar restoration-type projects that seek to transform habitat degraded, high-velocity eroded stream channels to lower velocity, flood channels with native vegetation and Chinook spawning habitat. Many streams in the CALFED solution area have high-velocity channels that could be restored for preferential habitat features. This project will provide information on cost for such work, and opportunities for successful methodologies if conducted properly with appropriate monitoring elements for the necessary feedback.

2a) Are the monitoring and information assessment plans adequate to assess the outcome of the project?
Not particularly. Please see comments under 1b2. In addition, there are no discussions on statistics to be used for fishery pre and post-project monitoring or whether such monitoring will result in quantitative or qualitative results. Though it is mentioned that pre-project data are available for water years 1998 and 1999, it is not clear that measurements were made in the project area. Also, these water years represent similar hydrologies; how will comparison evaluations be conducted with water years representing different hydrologies? It would be good for the principal investigator to include more detail in this section, including addressing the issue of adequacy of monitoring period; i.e. is two year's worth of monitoring sufficient to gauge success of the vegetative restoration and fisheries aspects of the project?

2b) Are data collection, data management, data analysis, and reporting plans well-described, scientifically sound and adequate to meet the proposed objectives?
Not particularly. Data analyses methods were not described in the proposal. Data handling and storage only minimally described.

3) Is the proposed work likely to be technically feasible?
The proposed work could be technically feasible. Certainly the physical aspects of the project (grading) are feasible and the modeling used for the study indicates (according to the applicants) the features will withstand certain food type flows. It would be good to have the revegetation element and techniques reviewed by qualified individuals who have extensive experience in this area. The monitoring element may also need to be expanded upon – or the project hypotheses more realistically defined to fit the context of the monitoring element. A review of gravels sizes for Chinook spawning is needed. One aged, and general reference was used to determine an appropriate size. Applicants should confer with appropriate professional individuals having local experience and knowledge in this subject. Project objectives are missing and need to be included and evaluated against the project's experimental design. Finally, the conceptual model as described in the proposal is not helpful in defining the applicant's understanding of the underlying science behind their proposal.

4) Is the proposed project team qualified to efficiently and effectively implement the proposed project?
For the most part, the project team appears to be qualified. This reviewer does have some concerns with the revegetation, monitoring and gravel size selection aspects of the project and recommends that these areas of the proposal be peer reviewed.

Miscellaneous comments

Overall Evaluation Summary Rating	**Provide a brief explanation of your summary rating**
	The proposal appears to be feasible and would provide sufficient benefit to an area with degraded habitat. If conducted properly, there is also a good chance that valuable lessons could be learned from this project. However, it appears that literature review prior to completing the proposal was limited, and leads to concerns regarding successful establishment of vegetation, spawning gravel size, and monitoring design – particularly to address the hypothesis as currently stated. Also, a section on project objectives is lacking, and a conceptual model was not appropriately

described. Recommendations to correct these deficiencies are made in the appraisal, above.

- ☐ Excellent
- ☐ Very Good
- ☐ Good
- X Fair
- ☐ Poor
