Panel Scientific and Technical Review Form
(Note: Review comments will be anonymous, but public.)

Proposal number: 2001-C207 **Short Proposal Title: Stanislaus Spawning Habitat & Floodplain Restoration**

1a) Are the objectives and hypotheses clearly stated?

Summary of Reviewers comments: The objectives of the study are not stated overtly, but are nonetheless reasonably clear in the project description. The hypotheses are well written and testable.

Panel Summary: Based on the proposal, the panel was unable to determine if the volume of gravel proposed to be added in the various investigations was appropriate to accomplish the objectives. Some panel members found the objectives unclear.

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

Summary of Reviewers comments: From a biological perspective (my area of expertise), the conceptual model provides a good basis for the proposed project. Based on the available information, the conceptual model is also ecologically defensible.

Panel Summary: The panel was divided between ecologically trained members who found the replication of spawning gravel introductions and experimental design interesting, and hydrology and geology panelists who were unimpressed.

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

Summary of Reviewers comments: "... the project includes a diverse and experienced team, as well as input from outside experts such as Drs. Kondolf and Mount. This high level of peer review suggests that the objective of the project will be met."

Panel Summary: The panel couldn't tell from the proposal. There is an investigation element, with a commitment to spend money for more. Areas that would have profited from more thought were how large gravel needs to be to remain in service for a reasonable duration, say 10 to 15 years. This could create a guide for subsequent additions. There should be explicit consideration of the quantity of gravel recruiting from existing sources and how much needs to be introduced. The assertion of a gravel size preference exhibited by rainbow trout (steelhead) as a subject needing investigation was disputed by panelists. The issue of mercury mobilization from sediments is not as important from a scientific as from a public perception perspective. The proposals to manipulate gravel sizes should disclose consequences to downstream channels as a minimum obligation, and the effects on benthic organisms as well as spawning fish considered.

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

Summary of Reviewers comments: Yes. The conceptual model provides a good argument that the Stanislaus River has insufficient high quality gravel for salmon spawning and floodplain habitat for rearing. I cannot comment on the relative merits of the sites selected versus other potential projects on this river. Ideally, the Stanislaus River deserves to have a comprehensive review of and ranking of sites for restoration.

Panel Summary: The panel felt the scale of the proposal is adequately described.

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

Summary of Reviewers comments: The monitoring techniques are comprehensive enough to allow testing of the major hypotheses. As a result, decision-makers should benefit for the experiences of this project.

Panel Summary: The results from this project have the potential to generate useful information if the investigator addresses the four criteria the Panel was concerned about and discussed in 1b2) above.

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

Summary of Reviewers comments: "{I was impressed by the breadth of information that will be collected. There are many additional variables that could be included part of the monitoring (e.g. primary production, zooplankton and non-salmonid fish). Moreover, projects of this type should ideally be collected over relatively long time scales (e.g. 10-20 years). However, this would add substantially to the project cost. One minor comment. I question the basis for the salmon rearing monitoring (Task 9). The stated hypothesis is that densities of fish should be higher on the restored floodplain that in the reference channel sites. In fact, the opposite may be true."

Panel Summary: The panel had questions about the adequacy of the monitoring and information assessment plans, but without them the project wouldn't be justifiable.

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

Summary of Reviewers comments: The methods for data collection are well described and scientifically sound. Details on the remaining factors were skimpy, but I do not believe this is a significant problem considering the proposal page limits set by CALFED.

Panel Summary: Some of this was deferred to later work, so the panel was unable to determine from the proposal whether it would be adequate

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

Summary of Reviewers comments: "...the applicants appear to have correctly identified the major engineering and permitting obstacles that must be overcome in order to make the project a success."

Panel Summary: Some of the sediment transport monitoring techniques proposed were within the specialty of panel members who suggested they were difficult to apply effectively and alternative and more readily applied methods could be more effective.

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

Summary of Reviewers comments: The project team appears exceptionally qualified at all levels. They have good project managers, engineers, biologists and land use staff with extensive "track records".

Panel Summary: Responsible parties are identified, and some have well-known reputations. Costs are better justified for this project than for some others.

5)Other comments

For this and other spawning gravel restoration projects, a minimum set of four criteria is needed to properly evaluate them. These four factors are stream competence, replenishment capacity, sediment quality and potential downstream effects. Because the proposals had not necessarily addressed any or all of these criteria, it was difficult to fairly compare them.

Overall Evaluation
PANEL SUMMARY COMMENTS

This proposal generated extensive discussion by the panel members. One observed that some of the fish studies cited in support of the proposal were not strong science. Another expressed reservation about a need for more analysis of re-grading of bars which was asserted to have a benefit of restoring geomorphology, and a panelist found that doubtful. Other means of gravel movement tracing than those proposed, such as sequential cross sections and scour chains were suggested. It was urged that the effort to investigate ways of accommodating steelhead spawning with a focus on gravel size were not justified.

Summary Rating

	Excellent
X	**Very Good**
	Good
X	**Fair**
	Poor

Your Rating: The panel did not reach consensus on this proposal with an almost equal division between those who evaluated it as FAIR and those who considered it VERY GOOD.