

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

Proposal number: J-203

Short Proposal Title: Corte Madera Steelhead

Explain connection to proposal, to applicant, co-applicant or subcontractor or to submitting institution (write "none" if no connection): NONE

Project Summary: The study proposes to address critical information needs regarding the relationship between water temperatures and growth and productivity of steelhead trout in Corte Madera Creek watershed to enhance conditions for this sensitive fish.

1a) Are the objectives and hypotheses clearly stated?

Summary of Reviewers comments:

Although a hypothesis is stated I don't believe the overall objectives are that clearly defined. Clearly they want to assess temperature effects on juvenile steelhead but the overall applicability is missing.

Panel Summary:

There is one simple hypothesis which is clearly stated. The objectives are implied but not clearly stated. The objective is test whether creek water temperatures are stressful or harmful for young steelhead. This is a useful hypothesis to test, as most studies examine temperature effects in a laboratory setting and often suffer the effects of over-feeding the lab fish.

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

Summary of Reviewers comments:

To some degree. Past work indicates temperature to be the most important limiting factor for steelhead in the watershed. If this is confirmed, the group intends to identify restoration actions. The model describes how temperature limitation will be evaluated. However, the method for identification of restoration actions is not clear.

There is a flow chart labeled conceptual plan to restore steelhead to Corte Madera Creek but a conceptual model as to mechanisms and life history is not described.

Panel Summary:

The proposed study appears to fit with the simple conceptual model, but feasibility of all phases of the model is not well supported.

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

Summary of Reviewers comments:

Conflicting review response.

One reviewer feels the bioenergetic approach proposed appears exceptionally useful.

Another reviewer questions whether the applicants fully understand the limitations of the bioenergetic modeling approach. This reviewer specifically states concerns with model parameters as the model requirements are not widely available, and the applicant has not described how they will be obtained. Limitations of stomach content analyses are also stated, and the applicant has not demonstrated the sufficient level of care that must be applied to use of these data. It is also unclear what the applicants believe can be obtained from the model. The reviewer also highlights management limitations of simulated information. The ability to use address the central issue of whether there is "temperature stress" is questioned. The approach is weak. There is no discussion of other biases that may affect the outcome. Field studies have numerous variables and there is no attempt to eliminate other possible hypotheses that may be affecting juvenile steelhead growth. Bioenergetics is

complicated task in the field. There does not appear to be any control for the experiment to weed out possible biases in growth or other environmental factors.

Panel Summary:

The outlined approach may be problematic for the above stated reasons. The modeling proposed may be useful if alternative methods to collect the data are not feasible. However, there are much more effective and useful methods to address the hypothesis in the study which reduce the uncertainty associated with the proposed model.

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

Summary of Reviewers comments:

Presumably this is a pilot research project but it is not clear how far the applicants want to take this. The resolve for carrying on the effort is missing.

Panel Summary:

This targeted research is specific to a single watershed, and is very directed in scope.

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

Summary of Reviewers comments:

To a certain degree. Steelhead have a wide range of temperature tolerances from northern end of the range to the extreme southern end of the range. This study would have limited applicability to watersheds within San Francisco Bay at best.

Panel Summary:

There is already a wealth of information of temperature requirements of steelhead trout. The information generated for this single watershed may not best serve CALFED overall objectives for ecosystem recovery. The applicants have not made a strong case for the extension of this site specific study to more widespread estuary problems. The project applicants have not convinced us that their study will link to the selection of management alternatives.

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

Summary of Reviewers comments:

I don't think so. See answer to 1(b)2
Not applicable to this proposal.

Panel Summary:

Not applicable to this proposal.

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:

No. There is no discussion of the collection of other data such as prey availability, weather conditions, hydroperiod, chemical and physical properties in the water. There is only collection of temperature gauge data and bioenergetics data. There is no discussion of QA/QC. Limited information described is well supported from the literature.

Panel Summary:

The plans are well described and supported, but limited in scope. The plans would need to be expanded to meet project objectives.

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

Summary of Reviewers comments:

There is a concern with the limitations of the bioenergetics modeling when more appropriate data collection would be feasible. It may not be possible to obtain the necessary endangered species research permits to do this work given the proposal to conduct dietary analyses on young steelhead through highly intrusive stomach evacuation methods. As such, it may not be possible to do the study.

Panel Summary:

There are legitimate concerns regarding study feasibility. The potential endangered species permit restriction is a realistic concern. The use of the bioenergetics model is of academic interest, as the method is well described in the literature and the use of this tool could be enhanced by the field approach to the study. However, the link of model output to realistic management alternatives may be problematic.

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

Summary of Reviewers comments:

This is unclear. Ms. Goldman appears to have no experience in the fish research realm. Ms. Rich seems qualified however, her experience in the physiological sciences and bioenergetics is unclear and there does not appear to be a publications list to support her vitae.

The project team has a strong background in the area of temperature effects. There is no indication the team has experience in the area of bioenergetics, the main research tool. The proposal to use local volunteers is unique and may be valuable for long term protection of the creek, but volunteers are notoriously unreliable.

Panel Summary:

It is obvious that a great deal of time and effort went into preparation of this proposal. There is no indication the team has actual experience with the main research method. Reliance on volunteers may also jeopardize project success.

5)Other comments

Outside reviews were mixed and ranged from fair to excellent.

One very careful review highlighted very specific and legitimate limitations of the proposal. The resource management perspective provided by an agency scientist involved in this panel review suggests that although this proposal may have been carefully written, it does not really address the most important data needs of CALFED.

Overall Evaluation **PANEL SUMMARY COMMENTS [include the consensus conclusions by the panel including the strengths and weaknesses of the proposal]**

Summary Rating

- Excellent
- Very Good
- Good
- XX Fair
- Poor

We assigned a fair rating to this proposal as a panel. One panel member points out that even though the proponents can't separate temperature out as a factor when they aren't controlling for food, this study could still be useful to know more about actual temperature relationships for management of Corte Madera Creek.

