

Draft Individual Review Form

Proposal number: 2001-K212-1

Short Proposal Title: Evaluate use of a two-dimensional hydraulic and habitat simulation model to assess benefits of channel restoration

1a) Are the objectives and hypotheses clearly stated?

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

The two stated objectives of the proposal focus on; 1) quantifying spawning and rearing habitat changes at the project site; and, 2) to evaluate whether restoration projects alter flow needs for chinook salmon in the Merced River. The first objective is reasonable and based on review of the proposal accurately depicts one of the primary purposes for the evaluation. The second objective may not be appropriate based on the limited scale of the project. The proposal focuses on measurement of habitat conditions at only one restoration project, which appears to include about 1.5 to 2 miles of river habitat. It seems unreasonable to assume that habitat flow relationships for such a limited length of river should provide the basis for altering flow recommendations for the entire river. From a broad based perspective however, evaluation of restoration projects will provide insights into the implications that restoration projects may have in determining flow release recommendations and therefore does provide valuable information that may be used by flow managers and decision makers. This is likely the intention of the second objective.

Another objective of the project not stated, and clearly implied in the project title, is to evaluate the effectiveness of the River 2D Model in estimating habitat for spawning and rearing chinook salmon. This is an important and valuable component of the evaluation and inclusion of this as one of the project objectives appears to be appropriate.

The hypotheses are clearly stated with detailed explanations that describe the purpose and connections between each evaluation task proposed. The evaluation includes descriptions of hydraulic and habitat model simulations which include collection of independent data points for validation purposes.

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

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

Although brief, the conceptual model does describe the basic fundamental assumptions between physical habitat characteristics and fish production.

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

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

The evaluation is well designed and the proposal provides a clear description of the scientific methods that will be employed to meet the objectives of the project. The project proponent plans to use established hydraulic and habitat simulation methods and has developed a good methodology to validate model simulation results and also includes an evaluation of the relationship between juvenile habitat use and habitat prediction outputs. The method proposes to collect three sets of hydraulic data collected at approximately 200, 400, and 1,000 cfs. Habitat simulations would be conducted for flows ranging between 100 and 2,500 cfs. Collection of an additional set of hydraulic data at discharges close to the maximum Q (2,500 cfs) would likely provide better hydraulic model results. This is particularly important if significant changes in channel stage discharge relationship relating to changes in morphology occur for flows greater than 1,000 cfs. Changes in channel character at elevations greater than WSELs measured at 1,000 cfs will likely change the hydraulic characteristics across the channel thus impacting habitat predictions at these higher flow levels. However, it is not known if collection of hydraulic data under a larger flow regime is feasible due to operational constraints and site conditions. Overall, the evaluation techniques are sound.

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

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

Yes, the applicant has justified the value and need for conducting this type of evaluation. Under section C.1.a. (Problem) of the proposal, the applicant provides a description of the value and utility of the project to Calfed. Development of monitoring tools that describe habitat changes resulting from implementation of instream restoration projects provide valuable information in determining restoration success and development of economical methods to achieve this goal are important.

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

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

Given the tremendous amount of effort currently being directed towards salmonid habitat restoration efforts through Calfed, evaluation efforts such as these are important tools that should be used to attempt to quantify and verify habitat benefits that may or may not occur as a result of these efforts. Results of this and similar monitoring efforts will benefit Calfed and will help Calfed prioritize future restoration efforts. This project is an important component in documenting the success or failure of restoration actions and provides valid input to the adaptive management process.

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

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

The project will describe both habitat and fish use observation changes before and after restoration activities occur at the project site. The overall study plan is well thought out and incorporates collection of critical micro-habitat data (velocity, depth, cover, substrate, etc) necessary to achieve evaluation objectives. In addition, to help verify the relationship between habitat predictions the study incorporates collection of actual habitat use data which will be used to help verify habitat model predictions.

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

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

Yes, The project the project uses established hydraulic and habitat simulation techniques and clearly describes the data collection and model simulation methods that are to be employed.

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

Provide detailed comments in support of your conclusion [Note: in the electronic version, this will be an expandable field]

Collection hydraulic data for the discharges anticipated (up to 1,000cfs) can easily be achieved. The only conditions that could compromise the technical feasibility of the study include a condition of unsteady flow during hydraulic data collection, and poor water visibility conditions during collection of biological validation data described under subtask 2.4.

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]

The USFWS Sacramento Field Office instream flow branch has many years of experience conducting IFIM type studies and is easily qualified to conduct this evaluation.

Miscellaneous comments

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

<p>Overall Evaluation Summary Rating</p> <ul style="list-style-type: none"><input type="checkbox"/> Excellent<input checked="" type="checkbox"/> Very Good<input type="checkbox"/> Good<input type="checkbox"/> Fair<input type="checkbox"/> Poor	<p>Provide a brief explanation of your summary rating</p> <p>The proposal is well thought out, incorporates established state-of-the-art methodologies for estimating salmonid habitat conditions and incorporates validation of habitat predictions through collection of habitat use data. Depending on the results of the evaluation, these types of investigations can provide Calfed with an economically method to evaluate similar restoration projects through out the Sacramento San Joaquin River system.</p>
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