

Draft Individual Review Form

Proposal number: 2001-K213-2

Short Proposal Title: Battle Creek Anadromous Salmonid Monitoring Projects

1a) Are the objectives and hypotheses clearly stated?

The objectives are clearly stated, and the needed data to test the hypotheses is identified in a point-by-point approach statement, within section c. Hypotheses being tested. There is further analysis on two stated hypotheses within the proposal. There is some confusion within the text which states that the 9 objectives and 11 hypotheses are listed in Table 1; however, Table 1 defines the three projects by activity description, starting and ending date of spring and winter chinook salmon monitoring on Battle Creek, and the “deliverable” quarterly and annual reports. The table referred to may be missing, or the sentence needs to be edited out or restated to clarify its intent to the reader.

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

The conceptual model could be more clearly explained. The description is in narrative form, and it needs more detail on the Restoration Plan (perhaps an accompanying table depicting the model to be used for each strategy). The in-watershed limiting factors concerning salmonid populations in Battle Creek are identified within the first paragraph. Previous analyses by restoration groups on these problems, including a Restoration Plan resulting from this work, are cited as the foundation for the proposed monitoring projects. Habitat management is the focus of the Battle Creek Salmon and Steelhead Restoration Program (Restoration Program), and the expectations and uncertainties are also clearly explained. Each uncertainty is identified and addressed by a specific hypothesis. In keeping with the adaptive management approach, the proposal is designed to detect the impacts of the fluctuating environment on salmonid populations.

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

Yes, in order to address the objectives of collecting population data for adaptive management of the Restoration Program, data must be collected from all freshwater life stages of the Battle Creek salmonids. The sampling equipment and methodology to be implemented for the projects are the standards of field work, but also include more sophisticated technology which is becoming the state-of-the-art in river monitoring programs (e.g. Smolt Monitoring Program conducted in the Snake and Columbia Rivers). The 11 elements identified in the Approach under section 2. Proposed Scope of Work addresses the areas of study. Adult salmonid data: timing and numbers of migration, timing and location of spawning success, fish sex-ratios and age/size ratios; juvenile salmonid data: numbers/age/weight/condition of fish; timing and fish size at emigration. Collection of tissue samples will be used in genetic testing, for identification of fish stocks and runs. This is especially important regarding fish straying from introduced stock or hybrid fish runs. How and where the data is collected for each element is described; part of the intent of the monitoring projects is to identify the causal interconnections among key ecosystem components, by identifying the potential limiting factors at various life stages of Battle Creek salmonids. Restoration will focus on identifying modifications to the natural habitat that brought about the current state of affairs of Battle Creek salmonids; and changing those modifications to bring about positive results.

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

Field research addresses an identified problem that cannot be solved using existing information. Although there is some historical record on salmon runs within Battle Creek, there is currently a lack of knowledge to

create a baseline database upon which to launch the Restoration Program. The Restoration Program will be a success if, given time, salmonids are able to access target habitats, produce juvenile outmigrants, increase escapement and meet AFRP/CALFED production goals. (The AFRP/CALFED production goals were not specifically stated within the proposal.) In order to ascertain that, monitoring must be continued throughout the length of the program. Adaptive management of Battle Creek is a response to the analyzed data collected via the monitoring projects. Therefore, the Battle Creek Anadromous Salmonid Monitoring, Assessment and Research Projects are necessary and justified as research projects. The applicant summarizes the projects as providing critical management information for CALFED Goal 1 – At Risk Species and CVPIA priority species within the freshwater life stages and habitats. The proposed monitoring will verify the achieved objectives, or suggest a new course of action to proceed with the Restoration Program.

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

Yes, the data being collected at any one time represents a specific case; on-going monitoring and its analyses represents a dynamic situation between habitat and fish health and points to a trend that could be positive or negative. Although each action has an expected response, on-going monitoring deals with real time and Chaos Theory. It is highly likely that all future decision-making regarding the Restoration Program will be dependent upon the results of these monitoring projects, and possibly be a framework to other restoration programs within the upper Sacramento River watershed. Under the Project Description, alternative Adaptive Management Plan responses have already been suggested, should the current plans not produce a positive outcome in restoring the fish runs in Battle Creek. Future decision-making is already implied within the monitoring projects.

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

The monitoring and information assessment plans are quite adequate to assess the outcome of the project, as it is currently designed. There is built-in flexibility in adaptive management, which is an advantage for the monitoring operation itself. Results from the monitoring and information assessment plans can bring about a refinement in the monitoring operation and a change in the restoration plans, to generate a more positive response within the fish runs. Quality assurance of the monitoring program and verification of the data collected will be accounted for (upon funding). The proposal needs to include a description of the process of determination and maintenance of data quality.

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

The process of data collection is well-described (as to method and location) under the Proposed Scope of Work section, scientifically sound (proven techniques used in field work), and adequate to collect the data on 11 elements identified for spring chinook salmon and steelhead in Battle Creek. (Similar information on winter-run chinook salmon will be collected, should winter-run chinook return to Battle Creek.) The data collections appears scientifically sound and adequate to meet the proposed objectives: the collection points are locations along natural waterways and refugia (rotary screw traps, snorkeling surveys, fish redds, carcass counts) or manmade fish passage (fish ladders, hatchery barrier dams, hatchery propagation programs). Estimations of populations will be extrapolated from total numbers of salmon counted at the ladder by percentage time that passage is observed. (Not stated within the proposal: to discount bias, fish counting sampling times should be staggered over a 24-hr period, in some random fashion, as migration numbers can be dramatically different depending upon the diurnal cycle, or other factors, and be easily under- or over-estimated by extrapolation.) Data collected for steelhead will be mostly gathered through the Coleman National Fish Hatchery (NFH) propagation plan, while salmon data will be collected at the hatchery, spawning redds, above and below the Coleman NFH barrier dam, at traps and from snorkeling surveys. A juvenile salmonid condition factor will be determined from a generated length frequency distribution.

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

Yes, the proposed sampling methodology and equipment are typically used in salmonid monitoring work and are technically feasible. If found that data is not being successfully collected, there will be an upgrade (outlined under Project Description) in monitoring procedures. A support system is also in place for analyses of the data collected and a history of restoration monitoring and data collection has been established by the Fish and Wildlife Service (USFWS) from which to draw. The chosen spreadsheet program for data input and generating reports will be consistent with information systems utilized by CMARP, CAMP, and EPA and be updated for multi-agency and public use.

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

Yes. Team members are familiar with the upper Sacramento River watershed, and Battle Creek in particular. All have previous habitat restoration/salmonid sampling experience, and all are specialized in some aspect of fish monitoring that they bring to the project to complement each others' work. The project leader has years of experience in enhancement of salmonid populations in the upper Sacramento River (including fish monitoring and restoration in Battle Creek), and is familiar with the many agency/private entities involved in the upper Sacramento River watershed. His fellow USFWS biologist works on CVPIA restoration and monitoring programs; he evaluates water development projects as well which will be invaluable background pertaining to potential Coleman NFH physical changes. The chosen supervisor for the monitoring program has previous monitoring experience on Battle Creek, including consulting on experimental design, data analysis, and telemetry and rotary-screw trap efficiency studies. He will be excellent as field team leader.

Miscellaneous comments

This is an important proposal for the planned habitat and fish restoration work in Battle Creek. It needs to be carried out as a component of the Restoration Plan. The proposal calls for 3 years of funding for a program composed of three distinct monitoring activities which the USFWS has successfully conducted in the past to attain like information identified for Battle Creek. The Restoration Plan for Battle Creek cannot be initiated without a monitoring program; therefore, I heartily endorse this proposal.

<p>Overall Evaluation Summary Rating</p> <p><input type="checkbox"/> Excellent <input checked="" type="checkbox"/> Very Good <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor</p>	<p>Provide a brief explanation of your summary rating</p> <p>Important proposal with scientific validation; could be better organized for readability.</p>
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