

Draft Individual Review Form

Proposal number: 2001-K210-4

Short Proposal Title: Health of Hatchery & Natural Fall-run Chinook in the SJ River & Delta

1a) Are the objectives and hypotheses clearly stated?

The proposal lacks a stated hypothesis, and multiple hypotheses may be inferred based on the types of data that are proposed to be collected and the loosely stated objectives. The proposal lacks a clear link between the collection of data, its analysis, and how it will be applied to improve the management of salmonid fisheries. It appears that the proposal has multiple objectives, however under the heading of “Ecological/Biological Objectives,” no objectives are stated. Instead, this section describes existing conditions. Two general objectives can be found under the heading of “Systemwide Ecosystem Benefits,” and include “providing qualitative in-sight into the health and condition of the juvenile chinook population” and that the findings “can be used by the CDFG in (the) development of optimal hatchery operations for the basin.” These objectives, however, do not relate to a hypothesis. Data collected without the intent of addressing a hypothesis is likely to result in insufficient or inappropriate information on which a meaningful finding or conclusions cannot be based, and therefore the data may have little value for making policy or management decisions.

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

The author provides a strong rationale for the need for such data, supported with the information on the decline of salmonids, threats to their survival, uncertainty of the effects of hatchery fish on wild populations, and the effects of disease on survival. How these effects relate to one another is well, albeit briefly, described so that the importance of each component is understood. This section lacks hypotheses about the causal interconnections among the components of their study, but relies on an explanation of current conditions. The author includes the data to be collected for this proposal (multiple tests for pathogens, multiple physiological measurements, stock, water temperature, and date), and its relevance to objectives of both CalFed and ERP. No other studies or investigations are referenced in this proposal.

This proposal lacks details regarding the analysis of data, and how it will be used. It is stated that quarterly, final, and oral presentation(s) will report the results, but the type of information to be included in these reports is not defined. It appears that the final product of this research will include a database for tracking, however with only two years of data its value for tracking trends is limited.

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

Based on the sole objective of collecting data, the approach and design is appropriate. In the absence of a description of data analysis, its utility to salmonid management is unclear. This study has the potential to comparing the disease levels between natural and hatchery populations, however the proposal does not provide baseline information of a “healthy” condition or other gauge of significance of disease to which new information can be compared. The proposal does not reference research regarding the prevalence of disease among either natural or hatchery populations, or explore the possibility of other factors (stress, injury, etc.) affecting survival. Similar interactions between fish, environment, hatchery operation, and disease have been studied in Atlantic salmon by T.A. Bakke and P.D. Harris (1998).

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

The author justifies the need for research regarding the presence of disease in both natural and hatchery populations, as disease may have profound effects on the survival and return of fish, as well as the effects

(possible transmission from hatchery to natural) between the two groups. The author states that there has not yet been a comprehensive, multi-year investigation into the health and physiological conditions of juvenile Fall-run chinook in the San Joaquin River and Delta. Based on their assertions, it appears that further investigation into the health and survival of juvenile Fall-run chinook is of value to understanding factors affecting the population. Though not stated, an enhanced understanding of these condition in the Fall-run chinook may be applicable to the management of other runs whose populations have experienced greater declines.

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

As noted above, one of the author's objectives for this research is to provide the DFG with information that can be used to improve their hatchery operations throughout the basin. This information can be used by the Department in its efforts to compare the quality (health) of hatchery vs. wild fish, and assess the risks hatchery fish pose to natural populations. This research may have significant implications to the management of declining fisheries because if the fundamental health and survival of a stock is poor, recovery may be limited despite future efforts to improve habitat.

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

Because this project is an effort focuses on data collection, no monitoring or assessment plans have been made. Data collection protocols, handling and storage procedures, and tests to be conducted are well explained. The research proposes to assess the health of the Fall-run population based on a range of parameters indicative of their health. The proposal lacks quality control mechanisms and standards for determining a successful data set. The study results will be presented in written (quarterly and an annual) and oral reports.

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

The author details the data to be collected but does not elaborate on its management. Details on the analysis of data are absent, and may not be in the scope of this study. The author justifies the sample size (270 natural fish, 330 marked hatchery fish) based on a presumed prevalence of infection of 2% (Ossiander & Wedemeyer, 1973). Data will be accessible in a database and summarized in quarterly reports, an annual report, and an oral report.

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

Yes, the proposed sampling will be completed concurrently with existing IEP sampling, and will utilize some of the marked hatchery fish already lethally sampled by IEP. However, an additional 270 naturally produced chinook from the San Joaquin River will also be lethally sampled. The proposal lacks an analysis of the effects that the loss of 270 naturally produced fish will have on the existing population, whose numbers have already suffered significant declines. Sampling will be completed weekly over 4 months using a variety of gear types. This sampling schedule should allow adequate leeway in variable success of capture, natural conditions that prohibit sampling, etc., while still allowing time for the collection of the desired number of samples.

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

The IEP, responsible for the collecting of samples, has substantial experience collecting fish samples from the Delta and its tributaries using a variety of techniques. Based on this experience I believe staff will be competent and qualified to collect and process the samples as described in the protocol. Samples will undergo analysis by the CA-NV Fish Health Center in Anderson CA. The applicant has substantial educational and professional experience in the field of fish pathology, and has completed multiple investigations into the health trout and salmon on the West Coast.

Miscellaneous comments

The research requests funding for only one year of funding to augment one previous year of a smaller study. The proposal states that a “comprehensive fish pathogen survey or physiological evaluation of juvenile Fall-run chinook in the San Joaquin River and Delta,” has never been done. Based on this statement it is presumable that this study should be comprehensive yet there is no indication that this study is intended to exceed these two years.

<p>Overall Evaluation Summary Rating</p> <ul style="list-style-type: none"><input type="checkbox"/> Excellent<input type="checkbox"/> Very Good<input type="checkbox"/> Good<input type="checkbox"/> Fair XXX<input type="checkbox"/> Poor	<p>Provide a brief explanation of your summary rating</p> <p>Overall the proposal is well justified based on the author’s description of the existing condition. This information has the potential to improve our understanding of factors influencing the health and survival of Fall-run chinook salmon in the San Joaquin River and Delta. The proposals greatest weakness lies in its brevity and lack of detail. The proposal would have more strength if it were based on a stated hypothesis and accompanied by a description of the necessary analysis enabling its fulfillment of its (loosely stated) objectives. The proposal lacks detail concerning how, and to what degree of reliability, the data will be in making policy and management decisions.</p>
---	--