

Draft Individual Review Form

Proposal number: 2001-K202-1 **Short Proposal Title:** Use of Delta for rearing chinook

1a) Are the objectives and hypotheses clearly stated?

The objectives are clearly stated, namely the researchers want to examine the role of the Delta in various aspects of the rearing and survival of chinook salmon in the Sacramento/San Joaquin system. The hypotheses are not clearly stated, as the proposal is written. The authors have six main bulleted objectives and only include one real hypothesis (although its phrased in two parts), namely that salmon that use the Delta for rearing survive to adulthood. The stated objectives are much more detailed in their scope. It would also be useful if the proposal addressed each of the six objectives in turn and explained how the work was going to investigate these directly (from data gathering through data analysis and interpretation).

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

The general conceptual model is fairly clearly stated. The reasoning behind this work is based on an evaluation of previous work in the system that has identified understanding the role of the Delta in the life history of Chinook Salmon as a priority. The conceptual model behind the use of otolith microstructure is also fairly well described although some parts of this model are not appropriate. (see below)

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

The first (and much more general) approach taken in the proposal, namely examining the use of the Delta by chinook salmon during different parts of their life history is clearly important and appropriate. Unfortunately some of the suggestions as to what the researchers can do with the second part of their approach (otolith microstructural analysis) are not appropriate, as they appear in this document. The proposal suggests that different natal streams will be identified using otolith microstructure. This is not very likely given the similar temperature and food regimes of the region. The use of otolith analysis will clearly differentiate periods when a fish is in the delta from when a fish is in their natal streams and the ocean but anything on a finer scale than that is unlikely. Previous work identifying hatchery versus wild reared stocks relied on a large signal in the otoliths that is likely to be present due to the differences between a hatchery and wild rearing environments. In addition one of the goals of the proposal is to correlate Delta survival with natal "stream habitat conditions". This is unlikely to be accomplished given that identification of natal streams is unlikely. In addition the proposal gives no details as to which particular "stream habitat conditions" would be measured or how they would be measured.

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

This project clearly falls into the category of targeted research/monitoring. It is specific to a particular question, and is very directed in its scope. If it succeeds, the project would be a useful tool to direct management goals and decision making in these streams in the future.

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

Aspects of this project will give managers and decision makers in a better set of information upon which to base management decisions in the future. An understanding of the role of the Delta in the growth and survival of all runs of Chinook Salmon may be extremely important for their continued survival.

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

Monitoring is not a part of this proposal as it is clearly directed research.

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

There are parts of the data collection, management, analysis and reporting that are well described but given 1a, 1b1, 1b2 above, other aspects of the proposal do not seem adequate to meet the proposed objectives.

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

One of the problems I see with this proposal is that one of the goals may be very difficult or impossible to reach given the approach taken. I refer to the goal of differentiating natal streams from one another. Given what I know about otolith microstructure analysis, differentiating stocks is very difficult and requires a large otolith signal. These otolith signals are due to either largely different temperature regimes or large difference in food supply. Neither of these conditions are likely to be met between streams in a region (which most of the streams sampled are). This suggests to me that the researchers will not be able to reach their third or fifth goals.

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

The project team appears well qualified to carry out this work. Bill Snider has significant work in with CDFG in the past and appears capable to execute this type of project. Dr. Titus also appears to have significant experience with otolith microstructure.

Miscellaneous comments

The declines in California over the last century of Chinook Salmon have been profound. A more complete understanding of the role of the Sacramento/San Joaquin Delta in the life history of this taxa will go a long way towards our preservation of California's anadromous fish fauna.

<p>Overall Evaluation Summary Rating</p> <p><input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> Good <input type="checkbox"/> <input type="checkbox"/></p>	<p>Provide a brief explanation of your summary rating</p> <p>The CALFED proposal K202: "Use of the Delta for rearing by Central Valley Chinook Salmon" is an interesting and potentially informative proposal. Unfortunately some aspects of the proposal, as it is written, are lacking justification for some of the claims it makes, namely the ability to differentiate natal streams in otolith microstructure.</p>
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