

Draft Individual Review Form

Proposal number: 2001-K201-4

Short Proposal Title: Genetic Populat Structure/Salmon

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 primary objective of this study is to obtain a comprehensive genetic data base of the population structure of Chinook salmon in Central Valley using sets of standardized allozyme and microsatellite loci. This objective was explicitly stated in the Executive Summary and Statement of the Problem. The complementary use of otolith microstructure data for details of age and specific rearing environments in meeting this objective is clarified in the Statement of the Problem.

In the Statement of the Problem, three hypotheses are clearly stated. The latter two relate to relative ages and isolation of lineages, and are also stated in the Executive Summary. The first anticipates attaining the objective through the genetic data.

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]

The conceptual model clearly defines the phenotypic/genotypic dichotomy, particularly as it relates to run timing. The independent divergence of temporal "races" in different major lineages is nicely outlined. The noted distinction of all Central Valley Chinook salmon subgroups from other conspecific lineages provides a valuable basis for subsequent considerations of temporal divergences within this lineage.

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 outlined approach appears to be a comprehensive means for meeting the objective. The allozyme and microsatellite procedures complement one another. Compatibility of data sets collected by different laboratories permits the incorporation of allozyme data for broad scale geographic and temporal comparisons over three or more generations for common areas and run times over many loci. These refined data will permit estimations of population sizes and gene flow as well as better assessments of the contribution of Central Valley populations to mixed stock oceanic fisheries. The correctly-noted finer focus but limited compatibility of microsatellite loci identifies the specific individuals or subgroups to individuals of the next generation within a more limited geographic range.

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]

The justification for this project is clearly established throughout the proposal. The anticipated broader understandings of relationships, degrees of divergence and interbreeding, and boundaries of central valley Chinook salmon subgroups will create a new and powerful basis for their management and (where threatened or endangered) recovery.

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]

Even the preliminary data (e.g. Hedgecock et al. 1995, Banks et al. 2000) have provided unique power for detecting and correcting inadvertent admixtures involving threatened and endangered Central Valley populations. Full implementation will extend this power in this regard, as well as in other areas (e.g. mixed stock ocean fisheries, management during upstream migrations of genetically isolated comigrating groups) noted in previous responses.

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 monitoring and assessment schedules appear to be sound. The scheduled quarterly, annual and final reports coupled with annual meetings provide adequate bases for “appropriate and timely assessment of monitoring and research data” by the project manager and project co-principal investigators.

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]

The proposal is rich with details suggesting adequate collection, management and preliminary analyses of data. In addition to the text, tables 1 and 2 give useful information regarding localities, numbers of samples and timelines for analyses. Numbers were somewhat vague however, where “additional samples” (Table 1) far exceeded the 350 per year projected in the text for allozymes, and I found no number of targeted microsatellite samples to be analyzed; these points need clarification. Likewise, the map (Figure 2) without names of tributaries, localities, etc. was frustratingly uninformative.

Given the successful applications to date of the proposed technologies in studies of Central Valley Chinook salmon populations, the data analyses and scientific soundness of the proposal stands up very well.

As for reporting plans, they are fine as far as they go. However, a mandate (and appropriate budgeting) is needed for some relevant papers in the peer-reviewed literature. Given the high powered team assembled for this effort (see below), the final phrase of p. 7, para 3 should read “—the results of the analyses will be published as technical reports followed by peer reviewed publications.” I see no excuse for this groups stopping with more “grey literature” that (despite the brainpower and relevant experience here) predictably would end up inadequately analyzed, synthesized and distributed.

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]

Yes, as supported in considerable detail above.

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 team itself is very strong in the respective subdisciplines with considerable experience studying the resources under investigation. They promise to generate a valuable and timely product, as envisioned in the proposal, that will be a necessary basis for restoring vitality to Chinook salmon populations of California's Central Valley.

Miscellaneous comments

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

Each agency provides a wealth of expertise in addition to the manager and co-Pis for assistance in analyzing, reviewing and synthesizing the products generated by this overall effort. Beyond the involved agencies lies a further abundance of interested and capable colleagues available in one way or another for advice or assistance.

**Overall Evaluation
Summary Rating**

- X Excellent
- Very Good
- Good
- Fair
- Poor

Provide a brief explanation of your summary rating

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

Despite a few caveats noted under 2(b), I give the proposal the highest of five Possible ratings based on its presentation, vision, and proposed leadership.
