

Draft Individual Review Form

Proposal number: 2001-K215-1

Short Proposal Title: Clear Cr. Juv. Salmon Mon.

1a) Are the objectives and hypotheses clearly stated?

The objectives are stated as to “i) estimate annual production of juvenile salmon (*Oncorhynchus* sp.) and steelhead (*O. mykiss*) using indices of abundance for inter-year comparisons; and obtain additional biological information: ii) define timing of fry emergence; define timing of fry emigration; and estimate size of emigrating salmon.” The hypothesis being tested is stated as “the annual production of juvenile salmonids will increase relative to pre-restoration levels.

It is unclear how juveniles from the different runs of chinook salmon will be distinguished; sizes of spring- and fall-run juveniles especially may overlap. Furthermore, growth in juvenile salmonids may be strongly density-dependent. If habitat restoration actions (or natural variability) increase the survival of eggs, larvae, and/or juveniles, juvenile growth rates may decline. This may affect fish “production,” but not be apparent in an index based on fish abundance alone. Production presumably is related to both survival and growth. Data on growth rates or length-at-age would add to the value of the project.

Objective ii is vague; data will be more valuable if they are statistically comparable among years.

Testing the hypothesis likely will require a large sample size (i.e., data collected over several years).

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

The conceptual model adequately shows how monitoring juvenile salmonids in Clear Creek will fit into the larger scheme of recovery actions for chinook salmon and restoring salmonid habitat in Clear Creek.

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

Outmigrant trapping data is well-known to be subject to biases (e.g., capture efficiency may be influenced by fish size, flow and turbidity levels, etc.). Methods for overcoming these biases especially will have to be employed in order to make meaningful inter-year comparisons. The project proponents should be required to participate in any agency efforts to improve and standardize sampling methodology and update their study design and data analysis as indicated by new information.

Methods are not detailed; the extent to which objectives can be met or that the hypothesis can be tested is not clear (see 1a). The project proponents state that “standard protocols for rotary screw trap sampling as described in the CVPIA CAMP will be followed (CVPIA 1997).”

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

The project is the continuation of an ongoing monitoring program for juvenile salmonid outmigrants in Clear Creek. Continuing the monitoring program is appropriate.

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

Yes, the link between habitat restoration actions in Clear Creek and juvenile salmonid survival and growth may be fairly strong because there is no hatchery on Clear Creek and the drainage is reasonably small. Therefore, the outmigrant monitoring data may be useful in directing management actions.

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

Yes, the proposed project is a monitoring program that will contribute to a long-term data set.

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

See 1a and 1b2 above.

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

Yes, the project is technically feasible. It is an ongoing monitoring program that involves equipment and methodology in common use.

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

Yes, the team includes experienced field staff and staff familiar with rotary screw trap outmigrant surveys.

Miscellaneous comments

None.

**Overall Evaluation
Summary Rating**

- Excellent
- Very Good

Provide a brief explanation of your summary rating

- xGood
- Fair
- Poor

Project has value because the link between habitat restoration actions in Clear Creek and juvenile salmonid survival and growth may be strong enough to show up in the outmigrant data, potentially providing a direct assessment of the value of habitat restoration actions. Efforts should focus on improving data quality so that meaningful results are obtained and statistical analysis among different runs and years is possible.
