

***Criteria for Evaluation:***

**1. Scientific merit**

**a. Clearly-stated objectives and hypotheses.**

Dr. Foott has contributed several studies on comparison of hatchery and naturally produced salmonids in the past three years. There has been direct application of this work regarding current thinking opposed to “hatchery bashing” which is emotional and not founded in much scientific research. More of this type of research is needed to focus on tools to evaluate the quality of hatchery produced salmon and to suggest culture methods for improvements. A project that I have been involved with on ESA-listed Redfish Lake sockeye salmon has used Dr. Foott’s research to guide our evaluations on changes in physiological parameters to compare direct hatchery-released smolts with those which volitionally migrated after being in the lake over the winter months.

**b. Sound approach.**

The proposed survey for pathogens does cover those of significance for migrating fall chinook. I would suggest that the “rosette agent”, EIBS and *Piscirickettsia salmonis* be added to the list of pathogens examined for. Dr. Foott went through sufficient demonstration that the fish to be lethally sampled were those which already going to be sacrificed and analyzed for mark retention. This gives additional information without adding to the number of lethally sampled ESA-listed fish. Sample sizes in the proposal are those accepted by the AFS/Fish Health Section to detect a 5% pathogen prevalence, 95% of the time as stated.

**Methods:**

Further explanation of the application and interpretation of the plasma protein and electrophoretic profile should be included on p 4. There also some additional cellular-based techniques that may provide further insight into immune competence (Alcorn, Pascho & Winton, 2000) which should be considered under the section on immune defense on p5.

**c. Adaptive management approach.**

Since the proposal is a request for continuation for a second survey year, the results from the prior year should have been mentioned. It appears that this would not have been possible since the application deadline was during the first year’s sampling period. Had that been possible, it would have strengthened the proposal. The proposal did not adequately indicate that it was **Targeted Research** as suggested.

**2. Adequacy**

Further explanation should have been provided, including a site map describing the proposed sampling locations for those not familiar with the drainage pattern for the study areas. Monitoring for pathogens and for physiological parameters was adequately described except for inclusion of the additional pathogens indicated above. Since this proposal is for an additional year of sampling, the monitoring plan was previously accepted and appears to follow a scientifically credible process.

**3. Technical feasibility.**

The proposal demonstrates its technical feasibility as a continuation into the second year. There is a need in survey studies of this nature to include more than a single year's worth of observation to encompass a greater variety of environmental conditions and additional broodyears of fall chinook. Sampling for this project is to be done by others and is dependent on their outcomes. These contingencies were adequately addressed in this proposal as required. Under the section entitled "Quarterly Budget (Table 4, p6), the quarters reflect last fiscal year, not the period for which funding is being requested. However, the requested dollar amount is within expected costs for a project of this nature which combines both field and laboratory work.

**4. Qualifications.**

Dr. Foott's qualifications are adequately documented. The qualifications of other personnel in the USFWS Cal-Nev Fish Health Center were not documented and should have been if pertinent.

***Overall Evaluation:***

**Very good**