



**Independent Scientific Review Panel**  
for the Northwest Power & Conservation Council  
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**Memorandum (ISRP 2010-19)**

**June 15, 2010**

**To:** Bruce Measure, Chair, Northwest Power and Conservation Council  
**From:** Eric Loudenslager, ISRP Chair  
**Subject:** Final Review of the Confederated Tribes of the Warm Springs Reservation's Fish Accord Proposal, Deschutes River Sockeye development (#2008-307-00)

### **Background**

This memo contains the ISRP's final review of the Confederated Tribes of the Warm Springs Reservation's revised Accord Proposal: *Deschutes River Sockeye development* (#2008-307-00). The goal of the sockeye development program is to re-establish a self-sustaining harvestable anadromous sockeye run above the Pelton Round Butte Hydroelectric Project. The proposal was originally submitted to the ISRP for review in November 2008, and on December, 12, 2008, we requested additional information before we could determine if the proposal met scientific criteria. Specifically, we found that:

Overall, insufficient information was provided. Reviewers are unable to determine the level or likelihood of benefits to the successful reestablishment of anadromy in Deschutes River subbasin *O. nerka*. The effort needs strengthening into a coherent proposal that directly identifies information needed to develop a sockeye reintroduction plan. Proposed work is not described clearly enough, nor justified strongly enough within the context of developing a sockeye reintroduction plan for the Middle Deschutes. Clarifying and strengthening the proposal could alleviate reviewers concerns. A strong proposal would be presented in a "phased" manner that indicates a deliberate step-wise approach. This progression is vital to the chances for success of the overall goal.

On May 13, 2010, the Council forwarded us the revised proposal and requested our review, which follows below.

### **ISRP Recommendation**

*Meets Science Review Criteria (In-Part, Qualified)*

Objective 1 (genetic analysis): Meets Science Review

Objectives 2, 3, and 4 (determine outmigration timing and abundance, movement from Suttle Lake, and compare SAR values): Response Requested – confirmation of the adequacy of sample

sizes to achieve precision in the population estimates is needed. The ISRP recommends consultation with statisticians.

Objective 5 (hydroacoustic surveys): Meets Science Review

Objective 6 (determine spawner escapement): Response requested – provide confirmation that sample sizes of marked and recaptured fish are providing robust estimates of kokanee spawning escapement to the Metolius River.

Objective 7 (prepare reports): Delete – this is an administrative task associated with all other objectives. It would be more appropriate to incorporate as a work element (task) under each objective associated with management objectives.

Objective 8 (develop a sockeye reintroduction plan): Meets Science Review (qualified). If the reintroduction of sockeye involves artificial production funded through the Fish and Wildlife Program a proposal to develop a Master Plan using the Council's Three-Step process would be needed. See additional literature on sockeye reintroduction plans.

## **ISRP Comments**

The proposal is much improved from the original version. Some objectives currently meet scientific review criteria, but other objectives need further development and presentation to the ISRP before a conclusion can be established.

*Technical Justification, Program Significance and Consistency, and Project Relationships (sections B-D)*

ISRP comments on the original proposal included a request for a discussion of the biological need for the work proposed. The revised proposal addresses that with a few sentences and a list of objectives in the abstract – not quite to the level the reviewers requested. However, the section on Technical Background was expanded and now provides good background. It is clearly written, but still terse.

The brief summary of *O. nerka* life history and status in the Deschutes subbasin above Round Butte Dam was adequate. The discussion of the anticipated passage facilities and attempts to attract and pass juveniles was incomplete.

Based on the technical background, it appears considerable uncertainty remains regarding the relationship of Metolius River/Lake Billy Chinook and Suttle Lake kokanee with remnant pre-development lineages. This needs to be resolved, and the proponent's philosophy and approach to reintroduction or recovery of the anadromous life history from kokanee should be clearly stated in an elaboration of Objective 8, the sockeye reintroduction plan. An evaluation of the evolutionary (ESU) status of the extant kokanee is needed. Once consensus is achieved on that topic, decisions on the primary goals of re-establishing anadromy will need to be made. The essential decision is what approach to take if the Suttle Lake or Lake Billy Chinook populations

appear to be remnants descended from pre-development sockeye. These fish may then have conservation priority as kokanee even if they fail to reestablish anadromy at an abundance and productivity sufficient to support harvest.

The proponent cites one example of reestablishing anadromy from kokanee, and uses this as justification for attempting the recovery effort. There probably are less than a half-dozen examples of sockeye being reestablished, so the outcome is very uncertain in the opinion of the ISRP. If reestablishing anadromy is ultimately the goal, the fish management actions need to support the evolutionary processes that permit the extant genetic diversity to respond to selection for anadromy. There is not an established protocol to implement this type of objective. There may be a trade-off between kokanee and sockeye and/or a trade-off between conservation of remnant relics and contemporary harvest. These topics should be fully discussed in the reintroduction plan. The ISRP provides additional citations of literature on reintroduction of sockeye in the Adams River (Williams 1987), Coquitlam Reservoir (Bocking and Gadbury 2003), and modeling sockeye populations (Macdonald et al. 2010) that may be useful for the proponents.

Reviewers' queries about how the work would be sponsored and conducted by the number of entities involved now seem to be adequately addressed.

#### *Objectives, Work Elements, and Methods (section F)*

Objectives were significantly revised and strengthened. In some cases they are now more specific than some of the original vague, broadly-stated objectives (i.e., develop a life history model) of which reviewers were critical. Objective 1 is now to assess the genetic structure of the fish, in conjunction with Project 200890700. Objective 7 (report preparation) is an administrative task associated with other objectives and should be incorporated as a work element (task) under them.

Additional details are required on the sufficiency of tagging and recovery components of Objectives 2, 3, 4, and 6. The information provided is not sufficient for scientific review.

The ongoing use of acoustics to assess kokanee abundance is still given in only very minimal terms. The revised proposal mentions using mid-water trawling to validate acoustics, with minimal detail.

#### *Additional Literature*

Bocking, B. C., and M.N. Gaboury. 2003. Feasibility of reintroducing sockeye and other species of Pacific salmon in the Coquitlam Reservoir, BC. Bridge-Coastal Fish and Wildlife Restoration Program 6911 Southpoint Drive Burnaby, BC V3N 4X8.  
[http://www.bchydro.com/bcrp/reports/docs/coq\\_feasibility\\_mar2003\\_final.pdf](http://www.bchydro.com/bcrp/reports/docs/coq_feasibility_mar2003_final.pdf)

Macdonald, J. S., D. A. Patterson, M. J. Hague, I. C. Gutherie. 2010. Modeling the influence of environmental factors on spawning migration mortality for sockeye salmon fisheries management in the Fraser River, British Columbia. *Transactions of the American Fisheries Society* 139:768-782.

Williams, I. V. 1987. Attempts to re-establish sockeye salmon (*Oncorhynchus nerka*) populations in the upper Adams River, British Columbia, 1949-84. Pages 385-395, in H. D. Smith, L. Margolis, and C. C. Wood (Eds.). *Sockeye salmon (Oncorhynchus nerka) population biology and future management*. Canadian Special Publication of Fisheries and Aquatic Sciences 96. Withler, F. C. 1982. *Transplanting Pacific salmon*. Canadian.