



# Colville Confederated Tribes

## Fish and Wildlife Department

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July 10, 2007

Patti O'Toole  
Program Implementation Manager  
Northwest Power & Conservation Council  
851 S.W. Sixth Avenue, Suite 1100  
Portland, OR. 97204

RE: Comment on ISRP Report, ISRP 2007-9

Dear Ms. O'Toole,

The Colville Confederated Tribes (CCT) are pleased to see that the ISRP gave a high ranking to the Washington State University proposal # 200752600, "Lake Oxygenation Pilot Study: Improving Redband Trout Habitat Quality In Twin Lakes, WA." We would like to offer our strong support for this project and encourage its funding.

We have reviewed the comments of the ISRP and greatly appreciate their input regarding this proposed project. We would like to take this chance to briefly respond from the standpoint of the CCT, since Twin Lakes is located on the Coville Reservation and we manage a tribal and recreational fishery in these lakes. Four main critiques are addressed below.

(1) Regarding the engineering of the oxygenation system and questioning its ability to maintain elevated oxygen levels in bottom water, it is our understanding the lake oxygenation is a fairly straightforward technology to implement and that a number of systems have been installed that fully maintain highly oxygenated conditions in bottom water. In fact a proven benefit of lake oxygenation (pure oxygen gas) compared to lake aeration (air as oxygen source) is its capability to maintain elevated level of dissolved oxygen in bottom waters of even eutrophic lakes and reservoirs. We are confident that a pilot system can be installed that will maintain well oxygenated conditions in bottom waters.

(2) While the ISRP endorsed our paired lake approach, they had some concern as to whether the two basins are similar enough to properly act as a treatment site and a control site. Years of monitoring in both basins show that they exhibit similar spatial and temporal patterns of temperature and dissolved oxygen, the two primary drivers of lake ecosystem structure and function. And as detailed in the proposal both basins have approximately the same volume, area and depth. We believe the basins are very similar and provide an ideal treatment/control configuration.

(3) Reviewers recommended that a pre-treatment survey be included. Obviously the short-term nature of the projects (1-year project with 6 months to report) precluded an extensive pre-treatment survey. The CCT would like to ensure you that we have developed an extensive data set of water quality and fish ecology in the Twin Lakes and feel that we will be able to strongly complement the evaluation of

the ecological effects of a single season of lake oxygenation with data from previous and ongoing efforts to monitor the lakes.

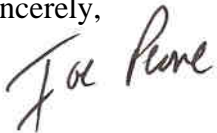
(4) The ISRP asked if “longer-term treatment is needed to uncover an effect.” Maintenance of well oxygenated conditions in the bottom waters is expected to yield immediate results – that is the benefit of lake oxygenation compared to watershed management efforts for example. In particular, internal recycling of phosphorus and toxic ammonia is expected to decrease and trout habitat will increase. It is true that the benefit of some aspects of oxygenation, such as a decrease in trophic status as a result of decreased internal nutrient loading, may take a number of years to realize. But a single season is enough to assess many impacts of lake oxygenation. In addition, the CCT will strongly consider operating and accessing a pilot system for an additional year or two, particularly if a positive impact on the trout fishery is observed.

Twin Lakes are extremely important to the Colville Tribes. A 2006 survey of more than 1000 licensed anglers on the Colville Reservation indicated that Twin Lakes is the Reservation’s most popular fishing destination. More than half of the production from the Colville Tribal Hatchery is annually stocked into Twin Lakes and it is the primary site of our redband trout restoration program. In addition it is a popular destination for water skiers, boaters, birders and those who just want to enjoy the outdoors.

The CCT has recognized the importance of Twin Lakes for a number of years and has put considerable effort into studying the water quality and fishery issues leading to reduced trout production in the lake. We know more about water quality and fishery issues at Twin Lakes than any other body of water on the reservation. These studies clearly show that because of summer time water temperatures and low dissolved oxygen levels, rainbow trout are limited to a narrow band of water that comprises only 7% of the volume of these lakes during July and August. Hypolimnetic oxygenation should widen this band considerably and generally increase water quality allowing the rainbow trout a much greater opportunity to compete with invasive fish species. Because of the importance of Twin Lakes both water quality and fishery issues will continue to be monitored by Tribal biologists, documenting the level of success of this project.

Low oxygen levels are probably the greatest risk to Twin Lakes (and other reservation lakes as well). This is an innovative project with a high likelihood of success. It is unique in that it will use two nearly identical bodies of water that share the same water source, one for testing and one as a control. Therefore, results of this study will be particularly meaningful and may be used elsewhere. We strongly support this project and encourage its funding.

Sincerely,



Joe Peone, Director  
CCT Fish & Wildlife

Cc: Edward Shallenberger, CCT Fisheries Biologist