



Independent Scientific Review Panel

for the Northwest Power & Conservation Council
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Memorandum (ISRP 2014-7)

July 18, 2014

To: Bill Bradbury, Chair, Northwest Power and Conservation Council

From: Greg Ruggerone, ISRP Chair

Subject: Review of the report *Okanogan Streamflow: ISRP Update, Opportunities for Instream Flow Restoration* (Project #2007-224-00)

Background

In response to the Northwest Power and Conservation Council's June 16, 2014 request, the ISRP reviewed the report titled *Okanogan Streamflow: ISRP Update, Opportunities for Instream Flow Restoration* from the Colville Confederated Tribes for Project [#2007-224-00](#), *Okanogan Subbasin Habitat Implementation Program (OSHIP)*. The report is intended to address the Council's recommendation associated with this project as part of the Geographic Review of November 2013: "Implement with condition through FY 2018: Sponsor to submit report regarding flows (ISRP qualification), by June 1, 2014 for ISRP review."

In the Geographic Review ([ISRP 2013-11](#)), the ISRP recommended that the project met scientific review criteria with the qualification:

The adequacy of specific strategies for improving water quantity and temperature should be considered (or modeled) under a range of plausible future scenarios (as per ISRP request #5). In general, the response was fine concerning the expected directions of climate change. However, the ISRP would like to better understand specific actions/strategies being considered or implemented to maintain biologically meaningful in-stream flow.

A short report should be submitted within 6 months for review by the ISRP. This report should address the mechanics of obtaining the water as well as a frank assessment of the willingness of those controlling the water sources to make suitable arrangements so that OSHIP can maintain adequate in-stream flows. For example, over the period covered by this proposal, how much water is needed, where will the needed water be obtained, and what is the potential contribution from each source? What plans or strategies are in place to obtain this water? How much of the needed water is projected to come from conservation agreements, how much from sealing stream substrates, and how much from other potential sources?

OSHIP's goal is to implement the Okanogan Subbasin Plan through a sequenced set of habitat restoration and protection actions that address limiting factors for anadromous salmonid production and survival in the Okanogan River, Similkameen River, and associated tributaries.

The streamflow report's purpose:

In 2008-2011, the Confederated Tribes of the Colville Reservation (CTCR), Fish and Wildlife Department, contracted Washington Water Trust (WWT) to provide technical resources for water acquisition objectives in the Okanogan Sub-basin, as outlined in the 10-year Memorandum of Agreement (MOA) between CTCR, Bonneville Power Administration (BPA), and the Bureau of Reclamation. This report summarizes and updates the flow restoration potential of water rights in Antoine, Bonaparte, Johnson, Loup Loup, Ninemile, Salmon and Tunk Creeks. It also includes strategies for reaching flow restoration goals through voluntary, market-based programs with willing water rights owners.

ISRP Recommendation

Meets Scientific Review Criteria (Qualified)

Qualification: The ISRP expects that OSHIP will address the issues here and in the comments section below when conducting its field efforts and when preparing annual reports for BPA.

OSHIP's streamflow report addressed many of the ISRP's questions identified in the qualification statement from the Geographic Review. The sponsors have made progress in researching the overall availability of water in each tributary and in summarizing existing water rights. They have also prioritized some sensible and expedient options for reallocating water to salmonids.

Although the report implies that the program has developed goals for water flow in the streams (see report purpose above), it did not describe or discuss these goals, including the extent to which the goals would help meet Endangered Species Act (ESA) and restoration objectives for salmonids. The project would be improved by developing specific targets for flow volume and timing in each tributary and by pragmatically assessing the feasibility of obtaining the desired amounts of water. Additional comments to improve the project are described below.

Comments

ISRP Question: How much water is needed, where will the needed water be obtained, and what is the potential contribution from each source?

The report provides information on the quantity (average, minimum, and maximum flows) and overall quality of water currently available within each tributary. It also summarizes existing

water rights that could potentially be reallocated to increase instream flow. The authors assess the feasibility of reallocating water rights in some tributaries, but not all.

The report does not provide context for how much water would be needed to meet ESA and restoration objectives for salmonids or to reach a benchmark such as the natural hydrograph. The sponsors *“have developed strategies for reaching flow restoration goals through voluntary, market-based programs with willing water rights owners,”* but the report does not describe the flow restoration goals for each stream.

Water for fish is needed for different reasons (thermal refuge for adults and juveniles, rearing habitat for juveniles, spawning habitat for adults) depending on the site and time of year. However, the report does not clearly indicate when additional water is needed to support salmonid life stages. Seasonal water requirements of salmonids (quantity and quality) should be compared with current water availability and discussed with reference to projected climate change impacts on water in the basin.

Potential contributions of water from sources other than existing water rights should be evaluated and discussed.

ISRP Question: What plans or strategies are in place to obtain this water?

The key strategy discussed in this report is to acquire water rights from willing landowners and to improve water use efficiency.

The report does prioritize existing water rights based on quantity of water potentially available, “beneficial use” (presumably for salmon), and priority date of the water right. This information was apparently used to qualitatively classify water rights into one of four tiers.

The report does not present a plan for interacting with water-rights holders to obtain the desired amount of water in each tributary. Previous approaches that have been successful in obtaining water for instream flow are described for several of the tributaries, but it is not clear whether continuing to use these approaches can further enhance instream flows or whether new tools and enticements for water rights holders will be required to make meaningful progress. Reporting details about successful approaches with water rights holders is important, in part because this information may inform restoration activities in other watersheds in the Columbia Basin.

The short summaries on progress and recommendations for obtaining water rights are sometimes difficult to follow in relation to the water rights summary tables. The summary for Antoine Creek is an example of a complex description that could be clarified.

ISRP Question: How much of the needed water is projected to come from conservation agreements, how much from sealing stream substrates, and how much from other potential sources?

The sponsors indicate that the primary source of additional water for instream flow is through conservation agreements with existing water-rights holders. Tactics listed in the “Conclusions” section include converting irrigation from surface water to groundwater sources and from tributary to mainstem sources; improving irrigation management and farm water efficiencies; and purchasing water rights no longer being used. Have other tactics been considered and ruled out?

Sealing of stream conduits was discussed as an option during the site visit, but the option is not mentioned in this report. If sealing substrates is still considered a viable option for increasing in-channel flow, some description of where this would be attempted and how the bed would be sealed should have been included in the report. Also, a discussion of whether there are financial resources committed to undertake stream sealing would be useful.

Other comments

In the Geographic Review ([ISRP 2013-11](#)), the ISRP provided a number of comments that extended beyond the qualification statement that requested the streamflow report. Future efforts and reports by OSHIP should address these issues. Specifically, OSHIP should further develop quantitative objectives for habitat restoration. The current objective is expressed as a desired percentage improvement in habitat quality, but the specifics of what this level of improvement actually means on the ground were not specified. Given the data being collected under the Okanogan Basin Monitoring and Evaluation Program (OBMEP) and the availability of the Ecosystem Diagnosis and Treatment (EDT) model for this watershed, more specific habitat objectives could be produced, including the need for water (quantity and quality) to support salmonid life stages in the tributaries. These quantitative objectives would be useful for evaluating progress against broader-scale objectives, evaluating the relationship of habitat condition to biological response, and updating the project prioritization lists. Specific habitat objectives also are essential for adaptive management.

The Program should consider working with OBMEP to ensure that enough project-scale monitoring is occurring to evaluate the relative effectiveness of different restoration options. Presently, it is not clear to what extent the habitat response to individual projects is being assessed, but this information could be critically important for improving the efficiency of the restoration program moving forward.