



## Independent Scientific Review Panel

for the Northwest Power & Conservation Council  
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**Memorandum (ISRP 2008-9)**

**August 8, 2008**

**To:** Tony Grover, Fish and Wildlife Division Director, Northwest Power and Conservation Council

**From:** Eric Loudenslager, ISRP Chair<sup>1</sup>

**Subject:** Review of the *Grande Ronde Basin Fish Habitat Project Summary Report, 1984-2007* for the ODFW Blue Mountain Oregon Fish Habitat Improvement Project<sup>2</sup> (1984-025-00)

### Background

At the Council's June 2008 request, the ISRP reviewed the Oregon Department of Fish and Wildlife's *Grande Ronde Basin Fish Habitat Project Summary Report, 1984-2007* submitted in response to the ISRP's final FY 2007-09 review<sup>3</sup> of the Blue Mountain Oregon Fish Habitat Improvement project (1984-025-00). We found the FY 2007-09 proposal "Fundable (qualified)" with the qualification that the ISRP should review a special report, or annual report, that presents an analysis of the data from this project together with a summary of the conclusions about benefits to the focal species and management recommendations for further habitat treatments.

Subsequently, the Council recommended the project for FY 2007 funding with FY 2008 and 2009 funding contingent on the sponsor completing the accomplishments report called for in the ISRP's recommendation and receiving favorable ISRP and Council reviews. ODFW responded with a comprehensive 317-page report describing habitat actions dating back to 1984. The ISRP's review of the report follows.

### ISRP Recommendation

#### Meets Scientific Review Criteria

The report is excellent and is the sort of results reporting that the ISRP has been requesting to substantiate scientific merit. The report should be a good resource for other sponsors in the Columbia Basin and perhaps could serve as a model for reporting and analyzing results. The ISRP appreciates the tremendous amount of work the sponsors did in preparing the report.

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<sup>1</sup> Dr. William Liss participated as a Peer Review Group member on this review.

<sup>2</sup> The project also uses the title Grande Ronde Basin Fish Habitat Enhancement Project.

<sup>3</sup> ISRP Final Review of Proposals Submitted for Funding through the Columbia River Fish and Wildlife Program (ISRP 2006-6, August 31, 2006): [www.nwcouncil.org/library/isrp/isrp2006-6.htm](http://www.nwcouncil.org/library/isrp/isrp2006-6.htm).

The plan to begin developing an integrated monitoring plan for the subbasin should lead to a significant improvement in monitoring efficiency and provide a more complete evaluation of incremental and overall project effectiveness. The sponsors and other cooperators in the subbasin are to be commended for recognizing the value of such an approach and for pursuing it to improve their monitoring efforts as an integral element to scientifically defensible project management.

## **General Comments**

The report provides a thorough presentation and analysis of monitoring data. It is well organized and clearly written. The report is comprehensive and covers a number of specialized restoration techniques. The sponsors have done a good job of summarizing a large amount of diverse and important work in the Grande Ronde subbasin. The ISRP appreciates that the sponsors were candid about the quantity and quality of the monitoring data, that their analyses were straightforward, and that their conclusions did not over-extend the findings to date. The sponsors' analysis demonstrates that overall the habitat projects are progressing toward achieving their objectives, although some projects have shown little or no progress to date, perhaps because more time must pass to see meaningful effect and results.

The sponsors have engaged a wide range of professional colleagues (other ODFW personnel, ODEQ, OSU, etc) over the years and have continued the collaborations and integrated their work with that of their collaborators wherever possible. The ISRP sees an opportunity for the sponsors to seriously consider integrating their work with the Intensively Monitored Watershed program (perhaps by designating a watershed within the Grande Ronde subbasin as an IMW) or a similar program to make sure they benefit from lessons learned from a long-term study.

The sponsors provided the historical background of the project which helped build context for the current monitoring and evaluation (M&E) work. The project is adaptive in that the sponsors recognize the current shortcomings and plan to correct them. In fact, the sponsors presented a section under each major subsection entitled "Lessons Learned." The information in these sections should be very valuable for others engaged in restoration work. The implications of the report, however, do not appear to have been incorporated into subbasin scale adaptive management. That is, the report does not describe how restoration actions and priorities have been altered as a logical extension of the lessons learned.

However, the sponsor's strategy of considering restoration actions on a sliding scale from passive to active depending on particular project needs is evidence of a type of adaptive management and, at a minimum, demonstrates an analytical approach that should be fostered. The passive approach to restoration is cost effective, but it makes projects vulnerable to shifts in landowner commitment and agreements for maintenance and continuation of the project (e.g., the Beaver Creek project, p.60).

Monitoring in the Grande Ronde subbasin would benefit from a more formal integration of ongoing efforts. The sponsors indicate that such integration is being discussed and provide a brief outline of the approach in Appendix E. Successfully coordinating monitoring programs in the Grande Ronde subbasin could substantially improve the quality of the information being generated. The project sponsors should

refer to previous ISRP and ISAB reports<sup>4</sup> as they begin to develop their plans for future monitoring, as these reports address some of the critical elements that should be considered in developing an integrated approach to monitoring.

Linkages in the current monitoring efforts between project effects on stream habitat and the biological response to those changes has not been fully addressed, as the sponsors note in the report. This linkage is perhaps the most difficult element to address in a monitoring effort. Yet, in order to evaluate whether or not restoration projects are addressing their fundamental objective (in most cases, restoration of fish populations) this linkage is critical. As we mention above, integration of project-scale monitoring with the Intensively Monitored Watershed program can help to address this deficiency. We also would encourage a closer look at the available data on fish populations in the basin to determine if there are alternative ways to analyze these data that might provide some indication of fish response.

The report clearly demonstrates what can be accomplished with targeted, albeit limited, funding for monitoring. Although the sponsors have been frustrated by caps on M&E funding they have worked hard to get other agencies to cooperate with them on this task and have been quite successful – demonstrating the added value of active collaboration.

## **Specific Comments**

1. The sponsors presented results from several projects that had pre-treatment data and compared them to post-treatment data to assess effects of the treatment. For some projects a reference (“control”) stream also was monitored to help account for out of basin effects. The report would be improved if more data on the references were presented.

2. The lack of reference sites appears to be a consistent deficiency for many of the Grande Ronde subbasin monitoring efforts. The sponsors explain some of the difficulties associated with the establishment and maintenance of reference sites, but without such sites, assessing project effectiveness becomes very difficult. This is especially true for some of the more passive efforts, like riparian plantings. If possible, reference sites should be established as part of a monitoring effort whenever possible.

3. A major shortcoming of the project is the lack of data on fish abundance and other population-level responses. The sponsors indicate that fish monitoring was not a priority for assessing restoration effects until recently. They recognize this shortcoming and plan to improve fish monitoring. The plans for future fish monitoring are realistic, and the sponsors are facing up to the acute problems where redesign of a project (e.g., a BACI design) is not possible. The project would benefit from juvenile fish sampling and reach specific spawning data that is continued for enough time to demonstrate trends.

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<sup>4</sup> For M&E guidance, see the ISRP's Web page ([www.nwcouncil.org/fw/isrp/Default.htm](http://www.nwcouncil.org/fw/isrp/Default.htm)) for the ISRP's Metrics Review (ISRP 2008-7), the ISRP's retrospective reports (ISRP 2008-4, 2007-1, and 2005-14), research plan review (ISRP 2005-20), and the ISRP/ISAB review of subbasin plans (2004-13); also see the ISAB's Web page ([www.nwcouncil.org/fw/isab/Default.htm](http://www.nwcouncil.org/fw/isab/Default.htm)) for the ISAB's Tributary Habitat Report (ISAB 2003-2) and other M&E related reports.

4. The sponsors surmise that several streams undergoing habitat enhancement would provide good winter habitat for juvenile fish. They should consider some sampling of fish in the winter, if it is possible, to validate this assumption.
5. Pg. 15: Figure 1 is very helpful and would be even more so if the numbers given in the Figure were linked to a project list
6. Pg. 7: The overall goal is properly narrowed to “select streams” on private land.
7. It is unclear whether modest reduction in temperature from riparian exclosures and plantings will improve conditions enough to elicit a fish response. Is there a threshold that the temperature needs to get down to before there will be increases in habitat capacity for juvenile production? Also, it would be helpful if the sponsors estimated how long it will take to convincingly demonstrate that improvements in temperature and aquatic habitat complexity occurred. Are the landowner agreements secure so as to allow long-term changes to occur? Do the sponsors have a plan for dealing with these projects after the agreements expire?
8. From the work to date, can any inference be established about how large the areas receiving restoration treatment need to be to materially have an impact on fish abundance? Are there treatment sizes and locations that can be established as priorities based on the findings from the monitoring data?
9. How much of the habitat on private land will need to be restored and how much riparian enhancement is needed to achieve improvements in fish abundance and productivity that are expected by the subbasin plan, the BiOp, and NOAA-Fisheries TRT gap analysis?
10. The techniques being used for habitat surveys should be adequate for generating a subbasin-wide assessment of habitat conditions. The sponsors indicate that such an extensive effort is beyond the current monitoring resources. However, a comprehensive view of how habitat across the subbasin is changing over time is required to understand the relative effect of the projects, and some effort should be devoted to developing methods of extrapolating results of reach-specific surveys to the subbasin as a whole. Are the projects having a significant effect on habitat quality at a subbasin scale or is habitat degradation in non-project areas occurring so rapidly that overall habitat condition is declining in spite of the projects? As the basin’s project sponsors begin to develop an integrated monitoring program in the basin, this question should be one of the focal points.
11. The objectives for water temperature are based on a return to historic conditions. This objective is based on historic and current climate conditions and does not appear to consider impacts from climate change on what may actually be achievable. It may not be possible to reduce summer temperature sufficiently to support salmonids in some reaches that may have supported these fishes historically. Consideration of climate change impacts on stream temperatures should become a prominent component of project site selection to avoid implementing a project at a site that will not be suitable for the target species in the future. Also, the temperature strategies do not include any mention of increasing summer flows, or specific measures taken to protect springs, seeps, and hyporheic channel areas that provide sources of cool water.

12. The use of photo points to assess project condition over time is a very efficient monitoring method. The sponsors have only used qualitative methods to assess their photo series, indicating that more quantitative techniques would require too much time and expense to implement. It may be useful to conduct a more rigorous interpretation on a subset of the photo series to determine what additional information might be obtained.

13. Very detailed measures are taken of physical features at the channel-relocation projects. This level of detail is clearly required in order to construct the new channel. However, to monitor channel response over time it may not be necessary to repeat all the initial measurements. In fact, reducing the resources dedicated to the re-surveys and including some measurements of biological features at the new channel sites would provide a more complete view of project effectiveness.

14. The fact that stream reaches used for spawner indexes extend through some project areas may provide an opportunity to evaluate project effect on spawning habitat quality. As the sponsors note, the survey data have not been collected in a manner that has enabled the separation of redds in the project area from those outside the project area. However, it would be worthwhile to examine the temporal change in relative spawner abundance over time (percent of fish using each index reach each year) as a function of proportion of an index reach that has received restoration treatment. There also may be other analytical methods that could be applied to the existing fish data that would shed some light on the biological response to the projects.