



Independent Scientific Review Panel

for the Northwest Power & Conservation Council
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Memorandum (2017-11)

November 20, 2017

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

From: Steve Schroder, ISRP Chair

Subject: Grande Ronde Model Watershed Project (#1992-026-01) – Meeting Summary and Suggestions for Synthesis Report

Background

On October 3-4, 2017, the ISRP participated in a site visit with the Grande Ronde Model Watershed (GRMW) team, its partners, and staff of the Northwest Power and Conservation Council (NPCC) and Bonneville Power Administration (BPA). The overall purpose of the site visit was to address the Council's [recommendations](#) and the ISRP's qualifications from the Umbrella Project Review of the performance and effectiveness of the GRMW's project (see [Council June 16, 2017 decision letter](#) to BPA and [ISRP 2017-2](#)). The Council recommended:

Implement with conditions through March 2019: The GRMW will develop an outline for a synthesis report ahead of the Model Watershed's annual projects meeting in October (2017). The synthesis report should focus on assessing whether the actions and associated changes in the physical habitat have contributed to addressing limiting factors. The GRMW's outline should be informed by discussion with Council and Bonneville staff to ensure that the synthesis addresses, in a manner suited to the role served by this project, ISRP comments and qualifications on M&E and adaptive management. The ISRP and Council staff will hold a joint meeting and discuss the outline for the synthesis report for issues noted by the ISRP. The final synthesis report will be due by March 31, 2018 for Council review. Bonneville to work with sponsor to complete their website with the ATLAS link.

The October meeting was responsive to this recommendation, but the GRMW had not yet developed an outline, by the time of the meeting, as called for in the recommendation. Instead, the GRMW sought the ISRP's input on potential organization and content of the synthesis before developing an outline, which the ISRP received in early November. The site visit included participation by the Oregon Department of Fish and Wildlife (ODFW), Columbia River Inter-Tribal Fish Commission (CRITFC), and NOAA Fisheries—GRMW partners with data and analyses

that could be used in developing the synthesis report. Information presented during the field tour and meeting was promising in addressing the ISRP's qualifications and comments.

In summary, the ISRP's most recent qualifications ([ISRP 2017-2](#)) asked the GRMW project to:

1. Develop a synthesis report describing measurable (quantifiable) objectives, linking the objectives to data and analyses assessing restoration effectiveness. The ISRP suggested that products from the GRMW's State-of-the-Science Reviews could be used to articulate progress toward habitat and fish rehabilitation, and the Restoration Atlas could be expanded to serve as a framework for evaluating progress at a landscape scale. After 25 years of funding, we emphasized that a comprehensive, empirical evaluation of the effectiveness of restoration actions was required at the landscape scale.
2. Establish time sensitive, quantitative objectives for each restoration action as well as for collective actions at the landscape scale. All objectives are to be expressed quantitatively in terms of expected (hypothesized) improvements (outcomes) in habitat or viable salmon population (VSP) parameters as well as an anticipated timeframe for accomplishment.
3. Document a formal process for adaptive management.

As described in the Council's recommendation, the synthesis report is intended as the primary means by which the GRMW will address the ISRP's qualifications. Thus, the synthesis document should be not only retrospective but also forward looking. Below, we briefly share impressions from the October meeting and provide suggestions for the synthesis report's contents. Our review below also includes comments on the recently received draft outline for the synthesis. We understand that the GRMW team will develop a final outline *"informed by discussion with Council and Bonneville staff to ensure that the synthesis addresses, in a manner suited to the role served by this project, ISRP comments and qualifications on M&E and adaptive management."* If the GRMW team and Council request, we are willing to review and discuss a revised outline to ensure a mutual understanding of content between the GRMW, Council, BPA, and ISRP.

Site Visit Activities

A subset of ISRP members (Gregory, Heller, Naiman, Schroder, Tullos, and Wood) met with the proponents and their restoration partners in La Grande, Oregon, on October 3-4, 2017. The first morning included visits to restoration sites at Limber Jim Creek, Sheep Creek, and the middle Upper Grande Ronde River. These sites were identified as priority treatment areas in the Grand Ronde Restoration Atlas and represented recently completed projects as well as sites being considered for future restoration actions. The afternoon included a brief attendance at a GRMW project review meeting and a private ISRP team session to discuss initial impressions.

The second day (morning only), ISRP members attended four research presentations informing restoration in the Grande Ronde Basin, learned about the Wallowa County Atlas development,

participated in a discussion of adaptive management, and exchanged views on the requested landscape-scale analyses and the synthesis report.

Impressions

The GRMW team appears to have effective partnerships with key agencies, Tribes, and community groups. This was evidenced by attendance at the site visit and the diversity of excellent presentations by researchers and others invested in improving the ecological and economic integrity of the Grande Ronde Basin. Visiting the restoration sites resulted in spirited discussions, with contributions from several participants. Research presentations by ODFW (Sedell), CRITFC (Justice, White) and NOAA (Cooney) were especially compelling as they clearly addressed important fish and habitat RME findings at the landscape scale. Conversations during the site visits indicated that collaboration with the US Forest Service (USFS) has substantially improved in recent years and that ongoing restoration efforts by the Umatilla and Nez Perce tribes are complementary to the GRMW program. The bottom line is that participants in GRMW activities are dedicated and information is readily available to address nearly all ISRP concerns. Several researchers and restoration personnel mentioned in private conversations that it would be productive to have an opportunity to invest more time on synthesis activities.

The ISRP remains concerned, however, that the GRMW team has not yet articulated an approach to adaptive management. The ISRP expects quantifiable objectives, explicit timelines for specific restoration actions, and an approach for determining if collective actions at the landscape scale are resulting in positive outcomes. Adaptive management is paramount, and the synthesis report is central to informing an effective adaptive management process. An interplay of quantifiable objectives, monitoring and evaluation (M&E), and adaptive management is needed to ensure that resources are being directed to the most effective restoration actions and outcomes. The fact that the effectiveness of past restoration actions has not been evaluated in a comprehensive way, despite 25 years of implementation, is of great concern. As well, both the Council's and ISRP's past recommendations have called for the articulation of an adaptive management process, which should be a key component of the synthesis report.

Contents of the Synthesis Document

The ISRP views the synthesis document as a timely opportunity for the GRMW team to demonstrate basin-wide leadership. By combining existing information from previous restoration actions with new information from CRITFC, ODFW, NOAA and others, the GRMW team should be well positioned to demonstrate how available scientific information informs on-the-ground actions to achieve specific outcomes. At its core, the synthesis document should serve as a framework for subbasin assessment and adaptive management. As well, the synthesis can serve as a vehicle to articulate future plans and visions.

GRMW leaders are committed to producing a synthesis. The proponents have asked the ISRP for guidance on what should be included in the document as well as for advice on how to improve the adaptive management process going forward. Following collective discussions during the site visit, the ISRP, without being prescriptive, suggests that the synthesis should:

1. Include a comprehensive summary of actions, organized by environmental objectives, conducted by the GRMW project during the 25 years of funding. This would focus on what has been accomplished (in quantitative terms) by the various types of restoration undertaken. Additionally, it would identify which restoration actions were deemed to be successful as well as unsuccessful, and why.
2. Include empirical evaluations of the effectiveness of the restoration actions in achieving environmental objectives. Address whether collective restoration actions (by type and landscape scale) contributed to measureable changes in physical habitat, especially those elements of physical habitat believed to be limiting target populations. Use quantified metrics to discuss accomplishments that have substantially improved habitat and the viability of fish populations, as well as restoration actions that have not been successful.
3. Summarize lessons learned for various programmatic actions. Related to the previous two suggestions, the ISRP feels that it would be beneficial to document any lessons learned about project prioritization, location selection, site/reach scale project design, required disciplines and skills, construction, required maintenance, post implementation adjustments, public outreach and partnership considerations, as well as upslope issues that had important linkages to floodplain and instream restoration activities.
4. Establish quantitative objectives with explicit time lines, for program and project scale activities described in the Umbrella Report as well as for new projects that have been funded. These objectives could be used to define the expected level of implementation, effectiveness, or responses by aquatic habitat conditions and target populations. They may apply to a single project action or to a program comprising a suite of complementary project actions.
5. Provide a description of how issues such as climate change, the proliferation of toxic chemicals and non-native species, and ever-increasing agricultural water demands will be addressed and integrated into an effective, forward-looking program.
6. Based on what has been learned from the five suggestions above, provide a vision of conditions in the Grande Ronde basin for the next 20-30 years. Describe spatially explicit, desired landscape and resource conditions, and plans for achieving those conditions. Umbrella projects are expected to use a science-based assessment and project prioritization process to identify future projects. Learning through an adaptive management process should be incorporated into this process.¹ The Atlas is helping to prioritize restoration actions under current conditions. It could be enhanced to provide a road map for achieving desired future landscape conditions. The 20-30 year vision needs to include specific quantitative objectives and actions, a process for adaptive management and public involvement, and a description of how

¹ See the 2016-2107 [Umbrella Project Review: Schedule and Instructions](#), the Council's 2013 Geographic Review Recommendation for Umbrella Projects ([memo](#), page 8) and the ISRP's Final Report for the Geographic Review ([ISRP 2013-11](#), page 18).

the mix and dynamics of the administrative, scientific, and technical personnel will collectively achieve anticipated endpoints.

7. Outline a scientifically objective procedure for assessing if the cumulative effects of past and proposed actions can achieve desired future conditions. This could be a combination of structured decision making and adaptive management, scientific syntheses at the landscape scale, and new or innovative restoration actions. For instance, what types of scientific syntheses are being planned and when would they be completed? How are/will data be shared and used – via an adaptive management process – to modify and prioritize strategic actions?
8. Discuss how scientific methods as well as emerging or evolving concepts will be incorporated in future actions. For example, what specific approaches could be used, after proof of concept is established, to determine the area of wetland meadows that need to be restored in order to meet desired baseflow and water temperature goals? Which emerging scientific methods (e.g., eDNA, remote sensing) and evolving concepts (e.g., conservation strategies) are expected to be incorporated into landscape-scale restoration perspectives in the next decade?

Comments on Draft Outline from the GRMW Team

The ISRP recently received a [draft outline](#) of the Synthesis Report from the GRMW team for comment and review. It is clear that the team put considerable effort and thought into what the synthesis should contain. The draft outline included many subheadings dealing with the background, origin, and governance of the GRMW program—which is useful information if concisely documented. However, the current outline does little to address the eight topics suggested by the ISRP (immediately above). Our content suggestion #1 (a comprehensive summary of past actions) could be covered in Sections VII and IX and suggestions #2 - 6 could be included in sections IX.C and IX.D of the GRMW outline. Suggestions # 7 (procedure for assessing effectiveness of actions) and # 8 (incorporation of new scientific methods) will also need to be incorporated into a final outline. The ISRP recognizes that the outline we received was an early draft and thanks the GRMW for the opportunity to comment on it. We suggest that the background information proposed in sections I - V of the draft outline should be summarized succinctly and that the synthesis should be focused primarily on the eight topics listed above.

Producing a synthesis document provides an important opportunity to retrospectively examine past actions and to summarize and evaluate the effectiveness of those actions. Documenting and understanding what has been tried and accomplished, and what needs to be achieved, will help inform future actions. Consequently, a synthesis becomes an important forward-looking tool for a program. It also informs outside parties about the actions, accomplishments, complications, and successes of a program. Producing a synthesis is challenging and time consuming, but the effort will pay off in benefits to the program and the larger community through better planning, historical documentation, and wider dissemination of new knowledge and lessons learned. As noted above, the ISRP is willing to look at a revised version of the outline after the GRMW and Council discuss our suggestions.

Additional Thoughts on the Synthesis

- The key findings from intensive studies presented by Ted Sedell (ODFW), Casey Justice (CRITFC), Seth White (CRITFC) and Tom Cooney (NOAA Science Center) should be included as components of the overall synthesis (see [October 4, 2017 presentations](#)).
- Previous work by an Oregon State University masters' student (Greg Bengé) examining the potential effect of stream restoration projects in the Upper Grande Ronde from 1984-2014 also appears to be especially applicable.
- Collectively, these studies give the GRMW team a major advantage over most other umbrella projects in documenting the location, timing and type of past restoration treatments as well as current habitat and ecological conditions.
- In addition, the synthesis should support an initial assessment of land use and climate change impacts on aquatic and riparian habitat, as well as predict the cumulative effects of habitat restoration actions on target populations.
- The ISRP also believes that close collaboration with ODFW, CRITFC, and NOAA Fisheries is necessary for an adequate synthesis to be completed since the data and expertise available from these agencies provide the foundation of the GRMW's M&E program.

Adaptive Management, Monitoring, and Suggestions

Adaptive management is the most efficient and quickest way for a program to reach its goals in the face of uncertainty. Quantitative, time explicit objectives for implementation, effectiveness and trend analysis are, collectively, essential parts of adaptive management. Practical examples of adaptive management are described in the ISAB's report on the comprehensive landscape approach ([ISAB 2011-4](#); also see [ISRP 2008-4](#)). Another recent example that may be especially relevant to the GRMW is the structured decision-making process and adaptive management approach that Jim Peterson and Adam Duarte are leading for the federal and state agencies and stakeholders in the Central Valley in California. The approach is based on the 2013 book "Decision Making in Natural Resource Management: A Structured, Adaptive Approach" by Conroy and Peterson. The GRMW project appears to be further along than the Central Valley of California was when their structured decision-making approach was initiated four years ago. Perhaps the GRMW team should contact the Oregon Cooperative Fish and Wildlife Research Unit or others doing similar work to learn about the overall approach, leadership strategies, lessons learned, potential collaborations, and potential use of life-cycle models as a tool for restoration planning.

Related to adaptive management is an observation about the GRMW Implementation Team's review of proposals. The ISRP would like to see that all project proposals developed under the umbrella program include quantitative objectives, that reviewers of these proposals recognize the need for quantitative objectives, and that these project objectives be tracked and linked to the broader objectives of the umbrella program. Leadership from the GRMW team will be required to ensure that this happens.

Additional challenges for the GRMW team are to identify gaps in essential monitoring activities expected from cutbacks to monitoring programs proposed by BPA, as well as programmatic adaptations made necessary by the cutbacks. Landscape-level assessments of fish, to date, have

depended heavily on smolt and adult counts (“in-out” monitoring) and CHaMP monitoring from 2011-2017. In the future, the GRMW team is encouraged to continue the landscape assessments and life-cycle modeling that CRITFC, ODFW, and OSU researchers have begun, while using the limited monitoring resources to address gaps, such as the “black hole” mortality of Chinook smolts during emigration. For instance, addressing the issue of “black hole” mortality will likely require better methods for measuring survival downstream of current rotary screw traps and upstream of the Lower Granite Dam. The bottom line is that future assessments at the landscape scale will depend on the continuation of selected core elements of existing monitoring efforts while implementing new or innovative approaches. The synthesis can be used to identify which future monitoring and data elements are critical for restoration effectiveness.

There is another synthesis report that the GRMW team may find useful. Nearly a decade ago 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 of the Blue Mountain Oregon Fish Habitat Improvement project (1984-025-00). The ISRP requested a special report that analyzed data from the project together with a summary of the conclusions about benefits to the focal species and management recommendations for further habitat treatments. ODFW responded with a comprehensive 317-page report describing habitat actions dating back to 1984. The ISRP ([ISRP 2008-9](#)) found the report to be excellent as well as a good resource for other projects in the Columbia Basin. While the GRMW synthesis is expected to differ in a number of basic features, the ISRP felt that the ODFW synthesis could possibly serve as a model for reporting and analyzing long-term results.