



Independent Scientific Review Panel

for the Northwest Power & Conservation Council
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Memorandum (ISRP 2016-4)

February 26, 2016

To: Henry Lorenzen, Chair, Northwest Power and Conservation Council

From: Steve Schroder, ISRP Chair

Subject: Review of John Day Habitat Enhancement Implementation Strategy (#2007-397-00)

Background

In response to the Northwest Power and Conservation Council's December 2, 2015 request, the ISRP reviewed the John Day River Watershed Restoration Strategy (Strategy) developed by the Confederated Tribes of the Warm Springs Reservation of Oregon (Tribes) for the John Day Watershed Restoration Program (Project #2007-397-00) and its partners. As part of the review, the ISRP also examined the application materials and scoring criteria used to solicit and select projects generated through the Strategy. The Tribes submitted these documents to address the Council's recommendation and qualification from the Geographic Category Review (November 2013). That review called for an ISRP and Council review of the Tribes' Strategy for the project, which was to be developed in coordination with the Oregon Department of Fish and Wildlife's (ODFW) John Day habitat restoration and irrigation screening projects (#1984-021-00 and #1993-066-00) and with appropriate local governments.

In the Geographic Category Review ([ISRP 2013-11](#)), the ISRP found that the project met scientific review criteria (qualified). The qualification stated:

In contracting and future reviews, the project sponsor should describe how project prioritization will mesh with activities of ODFW and other management entities. The sponsor's work and that of other agencies appear parallel in approach, but coordination could be improved. A past ISRP request for prioritization seems to not have been completed or coordinated with other basin entities. The sponsors need to ensure that their project works cooperatively with partners to develop priority restoration areas with no duplication of effort.

The ISRP should review the criteria that are used to review projects, the composition of the TAC, and the overall M&E plan as part of a review of the Implementation Strategy scheduled for completion in 2014.

As described in the Strategy's Preface:

The Strategy is written for John Day Basin landowners, Tribal partners, and potential funders to proactively identify and fund projects that protect, manage, and restore fish habitat. ...

The Tribes have outlined several key objectives for this Strategy:

- Clearly describe fish habitat restoration goals.
- Use a “protect, manage, and restore” approach for project investment to prioritize ecosystem processes, ongoing land management, and long-term recovery of habitats and fish.
- Prioritize projects that support and protect the rights retained by the Tribes in the Treaty of Middle Oregon, 1855.
- Incorporate stakeholder priorities to ensure benefits for landowners and fish habitat.
- Communicate the mutual “common ground” benefits of restoration work.
- Utilize a scoring matrix to rank and prioritize project proposals.
- Monitor project effectiveness, where appropriate, and share outcomes to improve future projects.
- Update and revisit the Strategy to ensure it reflects the most accurate and up to date knowledge.

ISRP Recommendation

Response Requested

The Strategy is an informative, well-produced, highly visual document that presents a basinwide approach and perspective for protection and restoration of the John Day Basin.¹ The document is an excellent source of information and provides a solid foundation for understanding the basin's watershed issues. With the cooperation of other basin partners, it has the potential to help unify watershed restoration in the basin.

Despite significant evidence of progress with the Strategy document, the project proponent has not fully addressed the ISRP's qualifications from the Geographic Review, and thus the ISRP requests a response. Key issues that remain unclear and require an additional response include:

1. Project Prioritization and coordination

- Further clarification is needed on how others doing habitat restoration in the Basin will use the prioritization process described in the Strategy. Have other Basin partners agreed to use the scoring process to mesh their restoration activities with those funded

¹ In this memo, “basin” refers to the John Day Basin and “subbasin” refers to subbasins of the John Day rather than the Columbia River Basin and its subbasins.

by the Strategy to limit duplication of activities? If such agreements have been made, it would be useful to describe them in the Strategy.

- More information on the project prioritization process is needed. How were weighting factors for “fish use,” “restoration potential benefit,” and “limiting factors” developed?

2. Public and Partner Support

It seems clear that successful implementation of the Strategy will require active participation and support from a wide range of stakeholders and partners. The extent of public and partner support for the Strategy, however, is not clear. This uncertainty exists despite the range of interests represented and involved in meetings during development of the Strategy.

Specifically:

- The exact purpose of the Strategy needs to be clearly articulated. Is it a Tribal strategy that will guide mainly Tribal efforts and funding or will it help focus, guide, and unify the habitat restoration efforts of many players across the John Day Basin?
- Further details about the roles and responsibilities of stakeholders and partners operating under the Strategy are needed. For example, it is not clear why federal land management agencies, especially the U.S. Forest Service, are not listed as John Day Basin Partners, particularly since most of the highest priority watersheds are in headwater locations on National Forest System Lands. The Forest Service is, however, listed as a stakeholder. This discrepancy contributes to a lack of clarity around the roles and responsibilities of stakeholders and partners under the Strategy.
- Letters of support for the described process by key cooperators would be helpful in the response to confirm support for this ambitious effort.
- It would help if an explanation of how partnerships have been and will be formalized in the future was included in the Strategy.
- The Science TAC appears to be limited in its disciplinary and geographical representation. The ISRP believes it would be advantageous if additional members with expertise in geomorphology, watershed hydrology, riparian ecology, etc. were added to this TAC.
- Additional information on the roles and responsibilities of the Science and Stakeholder TACs is needed.
 - How were individuals chosen for the two TACs?
 - How long will they serve on these panels (i.e., what is the length of their appointments)?
 - What is the composition of the team that will review proposals? How many reviewers will examine a proposal?
 - Will the three landowner groups, that were involved in prioritizing restoration actions in the Basin, continue to play a role in subbasin restoration?

3. Monitoring and Evaluation Plan

A general, schematic diagram showing three tiers of monitoring is provided in the Strategy. However, more information on the following questions is needed:

- How will implementation and action effectiveness of the Strategy be monitored and evaluated? Who will be responsible for these efforts? Since the Strategy represents a significant investment, covers a wide area, and will take place over multiple years, this type of monitoring will be needed to track accomplishments and adaptively manage components of the Strategy.
 - Specifically, how will the progress toward Strategy objectives be quantitatively evaluated? Have quantitative objectives and timelines that can be tracked been developed? The eight objectives listed on page 3 of the Strategy document are all qualitative and lack a timeline for accomplishment. However, they provide a good foundation for the development of quantitative measures to track and evaluate progress of the Strategy, which is needed.
- How will adaptive management occur? Information on how data will be analyzed and shared to improve learning and adapt projects is needed. Biannual coordination meetings are currently scheduled to occur. What other forms of communication are planned so that data and lessons learned can be shared with the groups performing restoration actions or with prospective partners interested in implementing parts of the Strategy in the Basin?

4. Additional Considerations for the Strategy Document

- How will improved coordination and collaboration occur with the ongoing Forest Plan revision process for the Malheur, Umatilla, and Wallowa Whitman National Forests. Management direction for the conservation and restoration of riparian areas and aquatic habitat will be revised and key watersheds will be designated in these plans. Was this process considered in development of the Strategy? Are arrangements being made to coordinate or collaborate with the Forest Service in this process?
- How will anticipated impacts of climate change be incorporated into the prioritization process?

We anticipate that the above questions can be addressed in the next few months. The ISRP is open to a site visit or teleconference if the Council and project proponents think that would aid the review process.

ISRP Comments

The document represents a substantial investment in resources directed toward the coordinated development of a Strategy for protection and restoration of the 43 catchments within the John Day Basin. It is well organized and includes discussion of instream, riparian, and

upslope restoration needs. It applies the general principles of ecosystem restoration to drive project development and prioritization. The Strategy is clearly communicated using photographs, maps, and graphics and presents a wide array of excellent information about the basin, its resources, and requirements for its protection and restoration. A general description of each subbasin, watershed priorities at the fifth field hydrologic unit code (HUC 5) level, a listing of “Target” and “Focus” restoration treatments, and a qualitative description of desired outcomes are provided. The prioritization process is comprehensive but complicated and includes 11 criteria for scoring. There is also a separate set of criteria for “Special Projects,” which include efforts that are not new acquisition or rehabilitation actions, such as monitoring, evaluation and technical assistance. Although a range of outside agencies and organizations have had at least some involvement in the Strategy development, in particular as part of a Stakeholder Advisory Team, further details about the roles and responsibilities of the stakeholders and partners operating under the Strategy are needed.

1. A scientific foundation demonstrating landscape ecology and the concept of resilience

The Strategy has a sound overall scientific and conceptual foundation, though some uncertainties remain regarding the implementation of the Strategy. It is intended to be process-based and is designed to apply a logical hierarchy of protection and restoration approaches guided by basin-scale priorities. It recognizes the role of both in-stream and upslope processes in maintaining and improving habitat conditions for bull trout, steelhead and salmon, though no discussion of their effects on lamprey is included. While the Strategy recognizes basin-scale priorities and processes, treatments tend to focus on correcting limiting factors at the reach scale. The assumption for this approach, which is common in many river restoration schemes, appears to be that treatments to enhance important ecological processes at the reach scale can be expected to cumulatively impact processes at larger scales (watershed, subbasin, and basin scales). It is not clear how effective this approach will be given that many processes driving the degradation and rehabilitation of ecosystems often operate at a scale much larger than an individual reach. Although upslope treatments, including juniper control and road treatments are considered, their consideration and application at scales larger than individual reaches are not addressed. This issue is particularly important since the currency of the Strategy is the watershed (5th field HUC). More effort is needed to ensure that upslope conditions are addressed at the watershed scale and do not adversely impact downstream restoration efforts.

Although highest watershed priorities are aligned with fully functioning watershed conditions, the approach of securing these areas as strongholds and building out from them is not articulated. Additionally, there is no discussion regarding the role of disturbance in the creation, maintenance, and/or degradation of habitat or regarding the role of resilience in the process. This would seem to be especially important in an area considered to be sensitive to land use and climate change, and subject to devastating wildfires (such as in 2015).

Overall, the emphasis on basin-scale priorities and the systematic assessment, protection, and identification of restoration needs, as offered by the Strategy, is commendable and generally

reflects the basic principles of landscape-scale restoration. The use of specific Target and Focus treatments is good conceptually, but in practice, there is lack of continuity progressing from the tables that show subbasin Limiting Factors to the description of Restoration Actions and Outcomes, and ultimately to the descriptions of Target Restoration Actions. For example, the list of limiting factors for the North Fork John Day Subbasin (page 52) indicates that altered sediment routing is an issue on 60% of the stream miles. Road Impacts are identified as one of four Target Restoration Actions in the subbasin. However, in the discussion of Restoration Actions (page 55), none of the listed actions directly address accelerated sediment delivery and routing, and only one outcome (eliminating road impacts) addresses this limiting factor. This example reflects a general lack of clarity on how the basin priority, limiting factors, restoration actions, and outcomes are developed and linked. Additionally, there is no mention of reduced sediment in the Outcomes section for the North Fork John Day Subbasin.

Two topics in the Strategy that need additional consideration and discussion are climate change and identification and protection of stronghold areas. Climate change is mentioned but is not actually addressed. Although it is noted that the Tribes recognize climate change as a “significant challenge to implementation” and that the Strategy will address this uncertainty through continual evaluation of new climate change science, there appears to be no application of current modeling of future flow and/or temperature regime scenarios. This component is needed to validate Strategy priorities, recommendations for protection of key areas, and for the use of various restoration treatments. Although important cold water source areas are mentioned and treatments to improve water quantity and to reduce stream temperatures are noted, they are linked to current conditions and not to any predicted future conditions. Particularly for the John Day Basin, the warm water temperatures and lower base flows expected under climate change should be a major consideration for strategic restoration planning.

Also, it is stated that the highest priority is for the protection of areas where ecological processes are fully functioning and areas with the greatest potential for restoring ecological processes. Unfortunately, there is very little additional detail on how this high priority action will occur. There is some mention of land acquisition and easements, but there is no discussion on how key strongholds will be identified or protected in the future. A promising opportunity appears to be in the designation of key watersheds in collaboration with the Forest Plan revisions for the Malheur, Umatilla, and Wallowa Whitman National Forests. Large portions of the highest priority watersheds identified in the Strategy are located primarily in headwater areas of Forest Service lands. If this potential collaboration is taking place it should be mentioned in the Strategy.

A review of density dependence ([ISAB 2015-1](#)) in the Columbia River Basin and a recent publication on density dependence in the John Day watershed (Tattam et al. 2015²)

² Tattam, I. A., J. Ruzycki, J. L. McCormick, and R. W. Carmichael. 2015. Length and condition of wild Chinook salmon smolts influence age at maturity. *Transactions of the American Fisheries Society* 144:1237-1248.

underscores the need to consider density dependence as the program moves forward. Tattam et al. (2015) report strong density dependent growth of Chinook salmon in the John Day River and showed how this growth affected diversity in age at maturation. Restoration actions should target, in part, factors affecting juvenile salmon growth. When evaluating fish response to actions and setting escapement goals, it will also be necessary to consider density as an important variable.

The document has a strong emphasis on fish rather than on landscape features that set up environmental conditions for producing and sustaining fish populations. There is little in the document about analytical landscape ecology or measures of resilience. A scientific foundation for demonstrating landscape ecology and resilience requires more investigative and quantitative analyses than contained in the Strategy. Additional consideration of landscape and resilience would be useful and is recommended.

2. Broad public support

The actual and expected extent of public and partner support for the Strategy is unclear. It is apparent that the Tribes have actively tried to engage public and private landowners and natural resources management organizations and agencies to participate in meetings central to the development of the Strategy. It is noted that a sizeable number of individuals, agencies, and organizations have been involved in Strategy development and have participated to some extent as meeting attendees. This representation is formalized in the organization of the two technical teams (TACs): a Science TAC and a Stakeholder TAC.

The establishment of the two technical teams is a strong step in the right direction. However, it is not clear how individuals are chosen, the terms of their appointment, or what balance was sought between fisheries and other disciplines. The Science TAC is comprised primarily of local fish biologists and appears to be narrow in its disciplinary and geographical representation. An effective balance of scientific disciplines, including and beyond fisheries, is needed for a landscape or ecosystem perspective, which is essential for addressing contemporary and future environmental conditions. If not already present, it would be beneficial if individuals with expertise in geomorphology, watershed hydrology, and riparian ecology were included in the Science TAC.

The roles, responsibilities, and participation of the two TAC teams are unclear, as is the mechanism for formalizing any of the partnerships identified by the Strategy. The composition of the review team for proposals should also be clarified. An organizational chart would help indicate how the various groups contribute individually or collectively to different parts of the Strategy. For example, three individual groups of Landowners (Lower, Upper and Middle/North Fork subbasins) were involved in development of Target and Focus restoration actions and the Strategy provides a listing of current John Day Basin Partners (page 91). However, it is not clear what the extent of future participation would be for these individuals or agencies, or if any written agreements have been developed to facilitate their involvement. The result is that

there is no clear indication of current levels of support for, adoption of, and engagement in the Strategy. It would be very useful to more fully explain the extent of cooperation with landowners, federal, state, and private entities for future implementation; the amount of land and river/stream habitat expected to be involved; and the anticipated timeframe.

3. Collaboration and integration

One of the most significant challenges in successful collaboration and integration in restoration efforts is “improving coordination between funders, restoration groups, and researchers so that restoration and monitoring actions occur based on the project design” (P. 94; Bennett et al. 2015³). The Tribes have directly included ODFW and other agencies involved in restoration in the development of the Strategy, including watershed and restoration treatment/project priority-setting. ODFW and other organizations are represented on the TACs and are presumably formal members. The Tribes note a desire to share information and to limit/eliminate duplication of efforts among the various players involved in protection/restoration via coordination meetings. This heightened level of involvement, information sharing, and formal coordination should help to lessen the chances of overlapping and redundant efforts. However, the program of future coordination activities for Strategy implementation should be communicated so that expectations of all stakeholders are documented and to ensure that cooperation and leveraging of resources occur for the highest priority protection/restoration actions in the highest priority locations. This coordination could include helping to identify stronghold areas for special protection and management and to ensure management direction that emphasizes riparian and watershed conservation and restoration.

Finally, the exact purpose of the Strategy is not clear. Is it (1) a Tribal Strategy that will serve to guide mainly Tribal efforts and funding—a strategy in which others have participated but have limited ownership, or (2) a document with wide ownership and support that helps to focus, guide, and unify the efforts of many players across the John Day Basin? Presently, it appears that purpose (1) is the primary focus, but formalized engagement with ODFW, the Forest Service, any cooperating landowner groups, and other management entities will be necessary for successful implementation inasmuch as the Strategy targets lands now almost exclusively in federal or non-tribal ownership. It does appear that the Strategy has the potential for much broader application to guide and unify protection and restoration efforts across the basin.

4. Capacity for learning and adaptation

The section of the Strategy addressing learning and adaptation needs improvement. A three-tiered approach to monitoring is briefly described, but it is very general and is not clear who is conducting the monitoring or how those data are shared. It is also not clear if specific, additional monitoring will occur under the Strategy on individual watersheds or projects. There

³ Bennett, S. and 13 others. Progress and challenges of testing the effectiveness of stream restoration in the Pacific Northwest using intensively monitored watersheds. *Fisheries* 41:92-103.

is no description of an information sharing process, a communications plan, or active use of adaptive management.

It is noted in Chapter 8 that the Tribal philosophy for monitoring and adaptive management focuses on informing and tracking Strategy objectives. These eight objectives are listed on page 3 of the Strategy document. They are all qualitative statements and do not have any quantitative description of desired outcomes or any timeline for accomplishment. They do provide a good foundation for development of quantitative measures to track and evaluate progress. Additional items that could be tracked and evaluated to gauge the success of the Strategy include:

1. the effectiveness of the project prioritization process, which is a key component of the Strategy (i.e., Is it selecting and focusing high quality projects consistent with the Strategy philosophy? Is it understood and applied consistently by the project scoring group?);
2. the extent and amount of pooling and leveraging of technical and financial resources that is occurring (a major element of the partnership approach);
3. the level of active participation in activities associated with implementation of the Strategy; and
4. tracking of actual project accomplishments as compared with stated subbasin restoration outcomes.

It is stated on page 89 that the Tribes feel that *“the framework in this Strategy, with respect to limiting factors and their impact on overall watershed health at the HUC 5 level, can be revisited over time to track these changes in ecological health.”* The Tribes should demonstrate that the approaches to assessing and addressing limiting factors at the reach scale are suitable for tracking and evaluating progress over time. To improve this effort, given the qualitative approach used in assessing limiting factors and their primary application being limited to the reach scale, some multiple reach scale approaches might be considered. It might be possible, for example, to utilize/adapt an approach like the Aquatic Resource Effectiveness Monitoring Program (AREMP), a multi-agency effort for the areas covered under the Northwest Forest Plan or the Forest Service Watershed Condition protocol, which is currently in use for National Forest lands in the basin. Other habitat programs such as the Intensively Monitored Watershed program, CHaMP, and ISEMP may also provide some valuable insights regarding the basin’s limiting factors. Regardless of the exact method, more specific and quantitative methods are needed for limiting factors to be tracked over time.

There is no discussion on the application of adaptive management as part of Strategy implementation. Although monitoring and adaptive management activities are listed on pages 88-89, it is only a list of monitoring activities. More discussion of adaptive management is needed early on as part of implementation efforts. There is no information provided on how the information will be analyzed, how it will be shared or used to improve learning or adapt

projects, or how it will enhance adaptive capacity in the John Day Basin. The capacity for learning and adaptation remains largely unknown. As noted above, however, the establishment of scientific and stakeholder advisory groups is a strong step in the right direction.

Specific ISRP questions on the Matrix User's Guide:

Page 1 discusses how the strategy is reflected in the scoring matrix, but the direct connection is difficult to visualize. The Restoration Potential Benefit (RPB) seems based on expert opinion. Whose opinion is used, and how are the values of 0-3 established? More clarity here is needed.

For Series 2, how were weights for the life stages developed?

For Series 3 (Limiting Factors analysis), the Tribes *“worked with members of the Science and Stakeholder TACs to identify factors limiting fish production.”* Why not use data and a more rigorous approach? There is some uncertainty within the ISRP about the meaning of *“fish use weight.”* Clarification would be useful. Also, what is the actual cost/benefit ratio; i.e., what exactly is being calculated?

It is not clear how the different series are weighted. How many reviewers are there for each proposal?