



## Independent Scientific Review Panel

for the Northwest Power & Conservation Council  
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**Memorandum (ISRP 2013-9)**

**July 25, 2013**

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

**From:** Greg Ruggerone, ISRP Chair

**Subject:** Final review of the Shoshone-Bannock Tribes' project *Yankee Fork Salmon River Restoration* (#200205900)

### **Background**

In response to the Northwest Power and Conservation Council's request, the ISRP expedited its evaluation of the Shoshone-Bannock Tribes' project titled Yankee Fork Salmon River Restoration (#200205900) as part of the Geographic Category Review. The ISRP asked for a response in its Preliminary Report for the Geographic Review ([ISRP 2013-4](#)). The Tribes responded to the ISRP concerns, many of which were identified in previous reviews of the project (see [ISRP 2012-10](#)). The ISRP's final review is provided below.

The goal of the Yankee Fork Dredge Tailings Restoration Project is to restore natural river channel characteristics, floodplain function, hydraulic and sediment regimes, and aquatic habitat within the dredged reach of the Yankee Fork, Salmon River.

### **Recommendation**

Meets scientific review criteria

### **Comment**

The ISRP appreciates the complete and timely response. For the most part, the detailed and elaborate response materials effectively address the issues raised in the ISRP's preliminary review. The sponsor should consider and address the ISRP comments below in project contracting, implementation, monitoring, results reporting, and future reviews.

### ***Preliminary Review Question 1. Winter Cover in Pond Series 3***

The ISRP appreciates the new information and excellent photographs regarding winter habitat conditions at work sites. We agree with the response observation that, while not immediately

obvious, adequate winter habitat has indeed been created as part of the Pond Series 3. The work on Pond Series 3 should serve as a useful template for ongoing efforts.

It will be interesting to see the effective life-span of some of the smaller trees used to provide cover over part of the project area. It seems likely that trees spanning the channel and situated above the water surface will likely decay rapidly and may lose their effectiveness as overhead cover. This possibility should be tracked as part of project monitoring.

The project focuses on creating "low-velocity (0–25 cm/s), moderate-depth (40–80 cm) pools that contain cover, which will primarily consist of wood" under the assumption that these are habitats selected by juvenile fish during the summer and are critical for overwinter survival. As noted below, some localized monitoring should be done to see if the habitat is actually being used.

### ***Preliminary Review Question 2. ISRP Qualifications from the 2012-10 Review***

#### *a. Specific quantitative objectives for VSP parameters*

The sponsor states that fish monitoring is conducted by another project. This response misses the point. The ultimate purpose of the project is to improve the status of steelhead and spring Chinook. This project should be using and evaluating itself with a yard-stick based on salmon and steelhead abundance, productivity, spatial distribution, and diversity. It is important for habitat projects to keep the overall goal of improved salmon and steelhead population status in mind when planning, implementing, and evaluating habitat restoration actions.

#### *b. Physical habitat objectives*

The sponsor indicates that existing and target metrics for physical habitat conditions in the project areas are provided in Table 6 of the Yankee Fork Fluvial Habitat Rehabilitation Plan (Reclamation and Tribes 2013, Document ID P132500). CHaMP methods will be used for evaluation. This information satisfies the qualification, but at least a summary of Table 6 should be provided in the proposal and, when appropriate, in annual reports so readers can easily locate the information.

#### *c. RME Plans - physical and biological monitoring*

Our 2010 review of the project (ISRP 2012-10) asked that the sponsor describe monitoring and evaluation sufficient to evaluate fluvial geomorphic conditions following habitat construction and fish population response. The original proposal did not have a habitat monitoring plan available at the time of the geographic review, but the tribes have now submitted a plan (The Fish Habitat Monitoring Plan for the Yankee Fork Watershed [WSI, 2013], Document ID P132591). The plan is based on CHaMP methods and a modified BACI design. With the understanding that the Council, BPA, and the Tribes requested an expedited review, the ISRP has focused on the restoration activities of the project and provides only a limited review of this

M&E plan. We offer general rather than detailed comments to improve the plan and project evaluation.

The WSI (2013) document describes a habitat-monitoring plan. Monitoring at the watershed level for fish population responses is described in project #2008-905-00. However, some smaller scale fish population monitoring is needed as the two monitoring plans mentioned above will be insufficient to answer some important questions. For example, do fish move from existing (presumably poor) habitat to the new, restored habitat? WSI (2013, Section 3.2) also recommended that “the fish study design be developed and implemented with the habitat study design to best elucidate how restoration actions influence fish populations.” Local monitoring is important to help the sponsor develop the most efficient designs to improve overwinter rearing habitat in this very harsh environment. This issue can be addressed in the statement of work and evaluated in future reviews.

The ISRP continues to note that CHaMP is a summer physical habitat protocol and important winter attributes may be missed. Additionally, food web and chemical features of the environment may not be detected using CHaMP methods.

***Preliminary Review Question 3. Identify Key Habitat Attributes***

The discussion of target habitat attributes and fish life stages were clear, detailed, and the conclusions appear to be logical and supportable.

***Preliminary Review Question 4. Budget and Logistics***

The ISRP understands that these are internal administrative decisions that fall within the purview of the Council, BPA, and Tribe.

***Evaluation of results***

The program, in conjunction with its partners, has accomplished the following actions to date:

- Yankee Fork Tributary Assessment
- Pole Flat Area Baseline Condition Assessment
- Bonanza Area Reach Assessment
- November 2012 completion of PS 3 side channel
- Yankee Fork Fluvial Habitat Rehabilitation Plan

**Preliminary ISRP comment requesting a response:**

A response is requested to address the following items:

- 1) More information is needed about the apparent lack of overwintering habitat and cover for juvenile anadromous fishes created in the just-completed Pond Series 3 channel. The root wads

and sufficient overwinter habitat complexity expected by the ISRP were not evident during the site visit. A project engineer mentioned that they were not able to obtain the large wood material from the U.S. Forest Service. If that is the case, the ISRP has concerns that the PS 2 and 4 pond series renovation proposed for the upcoming funding period will have winter habitat issues as well, and that should also be addressed.

2) Qualifications identified in the ISRP 2012-10 review are not resolved based on information provided in the current proposal. See the detailed explanation in the Results, Accomplishments, and Adaptive Management section below.

3) The three objectives, to reconnect historic channel and floodplain interactions, to enhance floodplain and instream complexity, and to conduct adaptive management, including monitoring, seem reasonable. The response, however, should identify the key habitat attributes that are desired and discuss what fish species and life stages will benefit and how they will benefit.

4) The project budget is entirely allocated to contractors beginning in FY 2017. It is not clear from the proposal whether the sponsor believes construction activities for habitat restoration will be complete in Yankee Fork at the close of this proposal in 2018.

Other comments are provided below as feedback for the sponsors for future consideration. The Yankee Fork restoration project is closely associated with the Bureau of Reclamation and Trout Unlimited and has employed a reasonable planning path from subbasin and recovery plan to tributary assessment to reach assessment. The Bonanza Reach Assessment concludes that site specific evaluation is needed before actual project selection and design is initiated. The ISRP believes this approach is justified in pursuing restoration of the Yankee Fork. However, the tasks required to complete the planning are not described in the proposal. Also absent is consideration of the mechanism to determine a preferred approach among various options, which include biological benefits, risks and potential benefits from active management at any specific site, and social challenges such as willing landowners. This discussion needs to be included in Annual Reports.

### **1. Purpose: Significance to Regional Programs, Technical Background, and Objectives**

The proposal to rehabilitate dredged landscape in the Yankee Fork floodplain has been identified in previous reviews. However, the prime benefits were not clear in the proposal, for example juvenile habitat or over winter habitat. The current proposal adequately describes its significance to regional programs. The restoration of the dredge-mined section of the Yankee Fork is identified in the Salmon River subbasin plan, Draft Idaho Recovery Plan, BiOP RPA 35, and is generally consistent with policy and science elements in the 2009 Fish and Wildlife Program.

Technical Background: The sponsor should provide a goal equivalent to a vision statement regarding the status of fish and habitat. Specifically, is there a goal of establishing habitat

sufficient to support self-sustaining populations of spring Chinook and steelhead? Reference should be made to the Yankee Fork Technical Assessment and the Bonanza and Pole Creek reach assessments to explain briefly the historical, current, and anticipated restored habitat. The Executive Summary provides the title of several construction projects which should be briefly explained in the technical background. Questions remain such as how do these projects help achieve the Yankee Fork goals and how were they selected using the watershed and reach assessments? In particular, the Bonanza assessment identifies a process of alternatives development. The technical background should provide a paragraph or two on what alternatives were considered and explain why the listed projects were chosen as the preferred alternatives.

Objectives appear consistent with the Fish and Wildlife Program and BiOp RPA. The specific long-term goal of a 30% survival of spring Chinook salmon from egg to smolt seems optimistic.

The BOR Tributary Assessment that was part of the previous review is quoted as indicating that the Pole Flat and Bonanza reaches "had the highest geomorphic potential" and that they, in addition to Jordan Creek represent 90 - 95% of the improvement potential. It was not clear how that conclusion was determined.

## **2. History: Accomplishments, Results, and Adaptive Management (Evaluation of Results)**

Information presented on past accomplishments is contradictory. The summary table shows only water quality information collected, but later sections show that several assessments, PS3 side channel construction, and establishment of a monitoring plan have been completed. In the accomplishments section there is mention of a Yankee Fork Habitat Monitoring Plan, which is a component of the Shoshone-Bannock Tribe's RME Plan under development. The accomplishments section goes on to report the implementation of field studies will begin in 2013. The larger Tribal RME plan and the Yankee Fork plan need to be included. The SRHE project states that they will be collecting habitat data for the Yankee Fork, but in 2013 the work will be contracted to CHaMP. All of these elements need to be discussed, in more detail, in future proposals.

**Adaptive Management:** The sponsor has demonstrated willingness to follow-up on ISRP recommendations to establish benefit goals for salmon and habitat, conduct reach assessments consistent with the tributary assessment, and use those assessments to develop habitat restoration actions. However, a direct link from the reach assessment to proposed individual actions is not transparent. Also, the reach assessment does not present a clear set of alternative choices to achieve the habitat restoration goal, rather a set of actions that all appear necessary to some degree. The reach assessment does not help with establishing a balance among the actions given the list of social and cost constraints. The overall Yankee Fork restoration effort leaps from the reach assessment to well-developed plans for P3 and P2.

**Response to past ISRP qualifications:** In a cover letter accompanying the proposal submission the Shoshone-Bannock Tribe addresses qualifications raised by the ISRP in the review of PS-3

(ISRP 2012-10). The ISRP identified three qualifications needing further development: a) biological objectives for focal species in terms of Viable Salmonid Population parameters, b) physical habitat objectives developed in reach scale assessments consistent with the Tributary Assessment, and c) monitoring and evaluation sufficient to evaluate fluvial geomorphic conditions following habitat construction and fish population response.

Biological and physical objectives are addressed in this proposal in the Objectives and Project Deliverables Section. Existing and target metrics are provided and the limiting factors addressed are identified for each deliverable. ISEMP monitoring will evaluate fish population response, and CHaMP monitoring will evaluate geomorphic conditions following construction.

For a) biological objectives for focal species, the proposal provides in the text for Deliverable 1, 2, and 3. "Focal Species: Chinook salmon, steelhead, bull trout and westslope cutthroat. Viable Salmonid Population (VSP) Parameters Improved: Abundance and productivity."

The ISRP concludes that specific quantitative objectives for VSP parameters need to be established, not just a statement that they will be improved. These quantitative objectives serve as benchmarks for evaluation of the efficacy of restoration strategies in adaptive management.

For b) physical habitat objectives developed in reach scale assessments consistent with the Tributary Assessment, the proposal provides text, but no succinct answer to the question posed. There is no identified linkage between the deliverables and the objectives, reach assessment, and tributary assessment.

For c) monitoring and evaluation sufficient to evaluate fluvial geomorphic conditions following habitat construction and fish population response, the proposal states: "ISEMP monitoring will evaluate fish population response and CHaMP monitoring will evaluate geomorphic conditions following construction."

Without providing more details on ISEMP monitoring of fish population response including the metrics and methods and CHaMP monitoring of physical features including geomorphic and habitat limiting factors, the ISRP is unable to conclude that monitoring is sufficient.

Based on these observations the ISRP concludes that the response to qualifications raised in earlier ISRP reviews were not resolved.

### **3. Project Relationships, Emerging Limiting Factors, and Tailored Questions**

Previous reviews expressed concerns about mobilization of mercury and other contaminants when the dredging works are disturbed. The proposal indicated that work on PS 3 answered these concerns, but nothing was presented.

The Salmon River Habitat Restoration (SRHE) project's role was not clear. This proposal states that allocation of funds to YFSR restoration project is insufficient and consequently some funds from SRHE are going to be used for restoration implementation. The SRHE proposal identifies that 20% of the budget is supporting restoration deliverables and work elements in this proposal. It is not clear to the ISRP why more funding is not assigned to YFSR restoration project and less to SRHE, and the habitat status and monitoring tasks assigned to SRHE, as suggested by the ISRP in 2006. These seem to be administrative decisions at several levels, not scientific ones, but it leads to difficulty reviewing both proposals.

Emerging Limiting Factors: The discussion is primarily limited to reduction in stream flow volume and altered timing of water supply associated with climate change. There should be some discussion of the status of mining, logging, and grazing that may influence the watershed, as well as discussion of any potential for additional second home building and expanded recreational use that may increase road densities and affect the stream ecology. Also, forest health and potential issues of increased wild fire and insect and disease outbreaks, in existing timber stands, may be a significant issue in the future.

#### **4. Deliverables, Work Elements, Metrics, and Methods**

The proposal has a long list of activities in each deliverable but also indicates that achieving rehabilitation would not require implementation of all of the identified actions. It was not clear to reviewers how the decision to stop will be made. Are time and money limiting, or is there some recognizable signal that indicates it is time to stop?

The deliverables section does not provide convenient linkage from the reach assessment to the identified actions so they can be associated with habitat restoration priorities and choices in the reach assessment. The deliverable has a lengthy list of potential sites to implement actions in Floodplain Reconnection RM 8.35-7.45 (DELV-1) and Floodplain Reconnection RM 9.15-8.35 (DELV-3), but no process for developing alternatives and choosing among them is provided. No deliverables or work elements are identified for more planning.

At this time these planned actions are not fully formed and their support requires a leap of faith from reviewers. On the positive side, the range of options being considered for each of the five sites is mentioned. It is not clear what the completed efforts will provide for improved fish production.

No monitoring is described in this study, but the proposal indicates the Tribes are implementing an RM&E strategy based in part on the Columbia Habitat Monitoring Program (CHaMP) and may include contracted services. The Tribes are presently working on the specifics of the RM&E program and plan on having a draft out for review in early spring 2013.