Independent Scientific Review Panel

for the Northwest Power & Conservation Council
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Memorandum (ISRP 2010-25) **July 22, 2010**

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

From: Eric Loudenslager, ISRP Chair

Subject: Response Request for Shoshone Bannock Tribes' Accord proposal, ESA Habitat Restoration Project (#2008-903-00)

Background

At the Council's June 25 request, the ISRP reviewed the Shoshone Bannock Tribes Accord proposal titled *ESA Habitat Restoration Project* (#2008-903-00). This new proposal is intended to "inventory, assess, plan, and implement necessary actions to ameliorate the effects of hydromodification, reduce sediment delivery, restore riparian function, improve stream temperatures, and improve passage for all life stages of anadromous and resident fish in priority areas of the Salmon River Subbasin."

The ISRP's review follows below.

Recommendation

Response requested.

The ESA Habitat Restoration Project (ESA-HRP) proposal is a good start, and it is clear that the Shoshone-Bannock Tribal staff enjoys excellent working relationships with other organizations engaged in habitat restoration in the Salmon River subbasin. This project has the potential to benefit fish populations in the Upper Salmon River (UPS) and Middle Salmon-Panther Creek (MSP). With the addition of site-specific details with respect to implementation strategies, focal species benefits, and monitoring of restoration actions, this project should contribute to significant habitat improvement in two heavily altered watersheds.

However, more information on the relationship with other projects (especially a clear description of what this project would deliver that existing habitat restoration efforts in the area cannot achieve) and some elaboration of the RM&E component are required to fully assess the technical merit of this proposal.

In sum, in addition to the numerous specifics identified in the comments below, a response should:

- provide site-specific details regarding implementation strategies, focal species benefits, and monitoring of restoration projects

- include additional discussion regarding the specifics of using a more targeted, science-based approach to assessing sediment and stream temperature as possible limiting factors, and then ameliorating them

- clarify the relationships and hopefully synergies that this new project would create with existing projects

The ISRP requests that these issues be addressed in a revised proposal augmented by a point-by-point response to the ISRP's concerns, indicating as appropriate where a concern was addressed in the revised proposal.

ISRP Comments

1. Technical Justification, Program Significance and Consistency, and Project Relationships (sections B-D)

This proposal seeks funding to initiate a process to prioritize, design, and implement habitat restoration projects in the Upper Salmon River (UPS) and Middle Salmon-Panther Creek (MSP) watersheds. However, the proposal indicates that this project is not strictly limited to these two watersheds, and projects may be implemented elsewhere in the Salmon River. The conditions under which a project outside UPS or MSP would be considered are not provided. Nor is an adequate explanation for the focus on the UPS and MSP provided. The rationale appears to be that other waterbeds (e.g., Lemhi and Pahsimeroi) in the upper Salmon River are already being addressed and inclusion of these two watersheds will help to complete the restoration program for this region. But a more complete explanation as to why these specific watersheds were selected would have provided additional support for this proposal.

The proposal, especially in Tables 1 and 2, does a reasonably good job of summarizing the current overall status of Chinook and steelhead spawning populations and an adequate job of describing the status of bull trout populations (which are somewhat less well quantified) in the UPS and MSP. Additionally, the proposal does a thorough job of describing how it would complement the fish habitat objectives in a number of some of the other restoration programs in the Upper Salmon River area. However, the *Upper Lemhi River – Acquisition* (#2008-601-00) project is not discussed, and this project area is impacted by many of the same problems that exist in the UPS and MSP. The Upper Lemhi Accord acquisition project was reviewed by the ISRP

([2010-5](http://www.nwcouncil.org/library/isrp/isrp2010-5.pdf)[1]), and we provided a detailed statement of the types of data that are needed for a scientific review of projects such as the ESA-HRP.

The ESA-HRP proposal was less clear in technically justifying the work that would be accomplished. The primary stated goal of the project is to remedy habitat limiting factors that were identified in the 2004 Salmon Subbasin Assessment by implementing a list of restoration actions that are summarized in Table 3. Although these objectives are useful from a general standpoint, the proposal lacked important details about where the initial restoration sites would be located, and it could have been more explicit in explaining the specific habitat benefits of the restoration activities (e.g., how many miles of riparian zones would be protected or whether the barrier removal efforts would open up significant amounts of new habitat) to the fish species of interest. This information should be provided for justification. The proposal's use of the limiting factors noted in the subbasin assessment (especially sediment and temperature, as discussed below) presents two major concerns to reviewers. One is that they tend to be scaled to whole streams and not individual stream segments. Additional evidence is needed in the proposal to show that the restoration actions, which tend to be applied at the stream reach scale and not the whole watershed, are likely to make a significant improvement in habitat that will then increase fish production. This has been partially addressed in Table 4, but without knowing more about the specific location of the proposed improvements and the anticipated habitat benefits it is difficult to appreciate that the work would be implemented in the best place. Maps showing locations are needed.

Proposed actions to ameliorate inadequate fish passage and problems associated with irrigation withdrawal are relatively straightforward and their benefits are somewhat readily predictable by both project proponents and reviewers. However, addressing other "limiting factors" such as sediment and stream temperature is more problematic. The proposal requires strengthening to be adequate in those areas. For example, when and where sediment significantly impairs fish survival and/or growth should be identified. Treatments designed to address these limiting factors should be specific as to how this factor impacts specific life-stages of the target fish species (in other words, when in the life of the fish is the factor limiting – is it summer or winter, is it only for a few weeks in August, is it when eggs are in the gravel, etc.?). If sediment is thought to be reducing egg-to-alevin survival, it might be most appropriate to identify actions that would reduce sediment delivery to areas of concentrated spawning activity and to assess project effectiveness with direct measurements of sediment in the actual egg pocket (relatively straight-forward for Chinook, more so than steelhead) as other measures of sediment, both in transport and deposited have been shown by Chapman (1988) to be irrelevant indicators of potential of fine sediment effects on egg and alevin survival. If sediment or temperature is known to be reducing fish production currently, how much amelioration is needed and can it be accomplished by proposed actions?

The proposal outlines an approach to project prioritization that is based on a number of habitat condition assessments that have been performed by various organizations in the project area.

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[1] http://www.nwcouncil.org/library/isrp/isrp2010-5.pdf

The paper provides a general indication of the criteria that will be employed in selecting priority streams for the implementation of restoration projects. It also provides an example of how this prioritization process would work by applying it to seven candidate projects currently being considered (we assume these projects would be the first to be implemented). The process appears to be a reasonable start to identifying projects with the greatest potential to contribute to recovery of listed fish populations (but see concerns about some limiting factors discussed in the previous paragraph). Reviewers compliment the authors on this aspect of their effort. However, the prioritization criteria need to be strengthened by incorporating an evaluation of the spatial distribution of current habitat conditions and restoration projects. Projects applied near areas that already support high quality habitat and productive fish populations would be expected to make a greater contribution to restoring populations than a comparable project located in an area where habitat is degraded.

One concern with this proposal is the existence of other projects in the area that appear to have very similar objectives. Section D of the proposal (Relationship to Other Projects) lists several ongoing efforts that seem to be involved in activities very similar to those proposed here. In particular, the Screening and Habitat Improvement Prioritization for the Upper Salmon Subbasin Project (SHIPUSS), the Yankee Fork Floodplain Restoration Project, and the Restore 12 Mile Reach of Upper Salmon River Project appear to have objectives nearly identical to this proposal and are being conducted in the UPS and MSP. The proposal does not identify the incremental value that this project would provide for these two watersheds. It seems as though many of the administrative and coordinating functions required by this project may already be partially available within these existing projects. This possibility raises the question of whether it would not be more efficient simply to expand the existing projects, thereby taking advantage of existing program infrastructure, rather than establishing an entirely new project organization. This issue should be addressed in the proposal and the relationships (and, ideally, the synergies) that this new project would create with existing projects clearly defined. This suggestion is especially important with respect to the monitoring component.

2. Objectives, Work Elements, and Methods (section F)

The objectives are generally appropriate for this project, and the work elements seem well suited to achieving the objectives. Compiling information from the multiple habitat assessments that have been completed in the project area should provide a good foundation for project prioritization but will need to be augmented to help identify the specific locations where project implementation would be most effective. The criteria to be used in the prioritization appear to be sound, although, as noted above, incorporation of some additional criteria addressing the spatial distribution of planned projects might make the process more effective. Included in the spatial description of the projects should be information about the habitat improvements that are anticipated to occur, as well as the projected benefits to specified life-stages of target species. Clarification to Table 5 is needed to point out what the numerical values depicting Accord and BiOp benefits represent.

3. M&E (section G, and F)

This project will rely on RM&E conducted under the Salmon River Habitat Enhancement Project (SRHE) to evaluate the effectiveness of restoration efforts. This approach can be efficient and successful if the SRHE assessments are coordinated with the application of the ESA-HRP restoration actions. There is no indication in the proposal that these two projects have developed a strategy to collect the data required to assess the effectiveness of restoration projects supported by this proposal, although "specific deliverables" from the SRHE project are identified (page 25). Most of these deliverables are measures that reflect responses at a stream-scale (snorkel counts of fish, water temperature, sediment levels, etc.) and provide an indication of the cumulative effect of all projects implemented in a drainage. These measures are a necessary feature of a complete monitoring program. But these attributes are not likely to respond rapidly to the application of a single ESA-HRP project; effects might not be detectable until many projects are implemented on a stream. Therefore, some project-scale effectiveness monitoring should be incorporated into the RM&E plan to provide an indication of the response to specific projects.[2] These site-scale assessments would measure changes in habitat conditions, water quality, and biological attributes in the immediate vicinity of a project and would provide an indication of the factors responsible for any changes in conditions observed at larger spatial scales. These site-scale assessments also would provide a much more rapid indication of the effects of a project than would be possible by relying solely on responses at larger scales.

Reference

Chapman, D.W. 1988. Critical review of variables used to define effects of fines in redds of large salmonids. Transactions of the American Fisheries Society 117:1-21.

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[2] For a detailed discussion of potential metrics that can be used to monitor restoration projects at the site level, refer to the ISRP's 2006 Retrospective Report: http://www.nwcouncil.org/library/isrp/isrp2007-1.pdf