



Independent Scientific Review Panel

for the Northwest Power & Conservation Council

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Memorandum (ISRP 2011-22)

August 10, 2011

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

From: Rich Alldredge, ISRP Chair

Subject: Review of the Idaho Office of Species Conservation's project, Lemhi River Restoration (#2010-072-00)

Background

At the Council's July 6, 2011 request, the ISRP reviewed a proposal for the Idaho Office of Species Conservation's Columbia River Fish Accord project titled, Lemhi River Restoration (#2010-072-00). The proposal's purpose is to "improve habitat quality in the Lemhi River watershed, including pool habitat, spawning habitat, riparian condition, stream flow, and passage to benefit all life stages of Snake River spring/summer-run Chinook and Snake River steelhead."

Recommendation

Response Requested

The ISRP concludes that more details are needed to conduct an assessment of the technical merit of the proposal. The following areas require additional information:

1. Explicitly state biological objectives for habitat conditions and focal species status resulting from implementation of habitat restoration strategies.
2. Provide a complete description of the technical criteria being used to prioritize restoration projects.
3. Describe the location of different types of restoration efforts relative to use of the streams by focal species.
4. Provide information on the habitat and biological response to projects that have been implemented in the Upper Salmon River watershed; including a description of any problems encountered in implementing these projects.

5. Provide more detail on how restoration actions will address site-specific limiting factors for fish including data-based evidence on the relative importance of limiting factors listed in the proposal and how the importance of the limiting factors is considered in the prioritization process.
6. Describe the nature of the relationship between the proposed habitat program and the Integrated Status and Effectiveness Monitoring Program (ISEMP) including an explanation of whether ISEMP will be evaluating reach-level or impact-area responses of projects implemented by this program. Provide a complete description and examples of the adaptive management process.
7. Provide additional detail on the work elements relating to RM&E, especially methods that will be used to monitor the project's biological effectiveness. For the study of groundwater/surface water interactions provide objectives, describe how the information will be used, and where the study will be conducted. For the proposed tagging study, explain how responsibility for tagging will be divided between this program and ISEMP and provide more details about sample size, duration of sampling, key environmental monitoring metrics, analytical techniques, and data archiving.

Comments

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

The narrative adequately describes the background for this Accord project for Lemhi River restoration. The objectives for this project, however, are never explicitly stated in the proposal. The overarching objective becomes evident only after reading through the entire proposal; this is a programmatic proposal for habitat restoration. The proponents wish to use a regional prioritization process to identify restoration projects and then provide financial support for the execution of high-priority projects. This point should be made at the outset of the proposal.

The proposal describes a series of work elements. However, it is not clear under these work elements exactly how the proposed activities mesh with other activities under other ongoing or recent projects for each topic. Nearly all work elements are actions designed to indirectly provide benefits to salmon and steelhead. It is imperative that the fish and wildlife benefits of these actions be clearly identified based on a scientific assessment and that a monitoring program be established to ensure that those benefits are realized. The scientific rationale for the proposed actions, beyond the general conceptual stage, is also lacking in this proposal. More effective use of fisheries research information within the basin and the region would be beneficial. In particular, there seems to be little in the way of specifics provided from the scientific work of other agencies such as the Idaho Department of Fish and Game, on quantifying benefits to fish and wildlife due to these proposed activities. It is therefore difficult for the ISRP to evaluate benefits on a scientific basis.

For several Work Elements resulting in improvements in irrigation efficiency (82, 149, 150, 151) and therefore water savings due to less water withdrawn, it is important to identify and quantify the additional amount of water that will remain in the river and the projected benefits to fish and wildlife.

The prioritization process that has been developed for the program area is more sophisticated than most others being used in the Columbia Basin. The proposal describes a fairly elaborate process for identifying new projects executed by a collaborative effort of federal, state, tribal and non-governmental organizations. The team appears to have the skills required to implement the process. The description of the administrative elements of this process is very complete. A strength of the prioritization process is that it considers both the site specific and “impact area” benefits of a project in determining priority. However, the description of the criteria used for scoring projects should have been more complete. This deficiency could have been partially addressed if a copy or a link to The Habitat Goals and Priorities document mentioned on page 8 had been provided.

The use of a considerable amount of “professional judgment” in priority setting suggests that much of the scoring is still subjective. Professional judgment is an appropriate tool in situations where more concrete information is unavailable. However, a goal of the adaptive management process for this program should be to reduce the necessity for professional judgment over time through RM&E. The linkage between the RM&E effort associated with this program and updating the prioritization scheme was incompletely described in the proposal. Lack of a robust prioritization process has been a shortcoming in many of the programmatic proposals that have been reviewed by the ISRP over the last several years. This proposal does partially address this deficiency, but the details of the prioritization process, especially the technical criteria that will be used to rank projects, should have been the focus of this proposal. Without a full description of these criteria, it is not possible to determine if this regional process for identifying and executing restoration projects will effectively contribute to meeting recovery goals. This weakness in the proposal is especially in need of strengthening because so many of the proposed tasks seem to provide very indirect benefits to fish and wildlife.

2. History: Accomplishments, Results, and Adaptive Management

This is a new project and has no history or past accomplishments. However, habitat restoration projects have been implemented in the Upper Salmon Watershed; this program is intended to expand ongoing efforts and increase their effectiveness. Context for the proposal would have been much improved if more details from existing limiting factor analyses had been discussed. Using Figure 1 as an example, where in the drainage network are diminished streamflows, migration barriers, juvenile entrainment in agricultural withdrawals, and degraded riparian condition (from p. 19) most likely to be problematic? Having this landscape-scale information in the project description would provide a better rationale for the work to be done, especially if it was linked to known spawning and rearing areas. There should be an extensive database of habitat inventory information available for the Lemhi River and its fish populations, and a more

detailed description of current conditions in the proposal is needed. Some description of RM&E results from existing habitat projects and the problems encountered in implementing these projects also would have provided informative context for this proposal.

The adaptive management system for this program is implied in the proposal; that is, there is a monitoring effort through ISEMP to evaluate effectiveness and this information is used to modify the prioritization process. A more complete description of the adaptive management process should be included in the proposal, including some examples of how the prioritization process or project work elements have evolved over time as a result of new information.

3. Project Relationships, Emerging Limiting Factors, and Tailored Questions for Type of Work (Hatchery, RME, Tagging)

The projects with which this effort will be associated are listed, although nature of the relationship among these projects should be better described. For example, more details about recent restoration efforts in the Lemhi River watershed would have been useful in illustrating the coordination of this proposed program with ongoing efforts in the area. It is not clear how this work is linked with management efforts for fish and habitat by Idaho Fish and Game.

One aspect of the background information that needs to be expanded is this project's relationship with ongoing ISEMP restoration monitoring work, and in particular how the proposed actions relate to the experimental treatments that have been implemented in the Intensively Monitored Watershed program for the Lemhi River. ISEMP is a well designed RM&E effort, and it will undoubtedly generate results relevant for the evaluation of the effectiveness of projects implemented by the Upper Salmon Basin Watershed Program (USBWP). However, it is not clear whether or not ISEMP will be evaluating reach-level or impact-area responses of projects implemented by this program. The project specific information is required to adaptively modify the prioritization process and to improve restoration project design. ISEMP clearly is collecting information at the scale of the Lemhi River watershed on salmon and steelhead population performance. This information will provide a basin-scale indication of population performance over time. But any improvements in salmon or steelhead populations cannot be associated with the habitat projects without a project-level assessment of habitat and fish response.

Treatment of limiting factors in this proposal is very generic, especially for sediment and temperature. It is not entirely clear whether an existing limiting factors analysis was used to guide the development of this proposal. No data-based scientific evidence is provided about the relative significance of the limiting factors listed in the proposal. Although no supporting information is provided, the proposal seemed to imply that diminished flows, migration barriers, and impacts to fish from irrigation withdrawals are among the most important limiting factors in the system. This implied ranking of limiting factor importance may not have been the intention of the authors, but it appears that way in the proposal and can be inferred from the priority projects listed in Appendix B. Therefore, it seems incongruous that much of this

proposal focuses on restoring instream complexity, rehabilitating riparian zones, and fixing roads. Provision of alternative water sources for farmers, removing barriers, and improving irrigation efficiency seems to be a secondary priority based on the manner in which the work elements are presented in the proposal. If these work elements are a high priority, it should be clarified how water saving will result and that the outcome will be more water in the river.

Assessment of relative significance of limiting factors could have been accomplished through an EDT analysis or site-specific, targeted evaluations. This type of assessment would have provided some indication of the relative importance of the limiting factors. Without this type of quantitative information, it is impossible to assess whether projects selected will specifically target bottlenecks for focal species or address habitat attributes nearest to biological thresholds, where relatively small improvements will have the biggest effects. The lack of rigor in the description of the relative importance of limiting factors raises concerns about the criteria employed in the project prioritization process. If there are limiting factors of overriding significance, projects that address these problems should receive the highest priority. The inclusion of a long-list of limiting factors, and work elements that address this list of problems, suggests that the prioritization process is not accurately identifying the projects with the greatest biological benefit. Some additional discussion about the relative significance of the various limiting factors and how the significance of the limiting factor is considered in the prioritization process should be presented.

4. Deliverables, Work Elements, Metrics, and Methods

The Work Elements section is essentially a compilation of restoration methods that have been applied widely in the Columbia Basin coupled with a few RM&E activities. The steps required to implement work elements related to on-the-ground actions, such as “Increase Instream Complexity and Stabilization” and “Decommission/Relocate Roads,” are well established and the description of these work elements is sufficient. These work elements, however, are non-specific with regard to location, and some elements, such as wetland restoration, do not appear in the Appendix of priority restoration actions. Associating each work element with locations or priority candidate sites where these actions are most appropriately applied is required, along with a rationale for the habitat work and the anticipated benefits to focal species, in order to determine if the work elements are aligned with program objectives.

An important work element appears to be missing from the proposal. The proposal indicates that most restoration efforts, especially lower in the watershed, must occur on private lands. Therefore, an important element for this program should be a process for engaging landowners in the restoration program. High priority reaches, based on the subbasin plan or other assessment, should be identified and project concepts developed by technical staff for restoration of these sites. These conceptual designs should then be presented to land owners by a team with the diplomatic skills needed to convince the private or public land owners to participate. Some understanding of landowner willingness to engage in a restoration project should be an element in project prioritization.

One of the work elements contains a puzzling element that requires further explanation. The element entitled “Operate and Maintain Habitat/Passage Structures” includes the following action item: “Maintenance of residences, sheds, barns and other buildings associated with habitat/passage projects.” These types of structures are clearly not a standard component of a habitat or fish passage project. Some explanation as to why this action item is included and when and where the project proponents feel maintenance of such structures is a legitimate responsibility of the restoration program should be included in the proposal.

The description of RM&E for this program is inadequate. Although it is worthwhile knowing that IDWR, IDFG, and ISEMP will participate in the effectiveness monitoring aspects of the M&E program, insufficient details are given to evaluate the technical merit of the monitoring efforts or the level of integration of this program with ongoing RM&E programs. The lack of detail in the description of the RM&E effort is illustrated by the two work elements in the proposal related to RM&E. These work elements are “Collect/Generate/Validate Field and Lab Data” and “Mark/Tag Animals.” The first of these elements is intended to generate information on groundwater/surface water interactions in the project area. The proposal provides no objectives for this study, how the information will be used or where the study will be conducted. Given that one of the most important limiting factors in the area is a lack of surface water flow, especially at tributary junctions, a thorough understanding of this topic could be relevant to the restoration program. But insufficient information about this project is provided to enable an evaluation of its technical merit. The work element related to tagging also does not contain enough information to evaluate whether or not this effort will provide useful information, nor is the division of tagging responsibility between this program and ISEMP explained. More details about sample size, duration of sampling, key environmental metrics to be monitored, analytical techniques, and data archiving are needed.