



Independent Scientific Review Panel

for the Northwest Power & Conservation Council
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Memorandum (ISRP 2011-8)

March 10, 2011

To: Bruce Measure, Chair, Northwest Power and Conservation Council

From: Eric Loudenslager, ISRP Chair

Subject: Final Review of the BiOp proposal, Tucannon River Programmatic Habitat Project (#2010-077-00)

Background

At the Council's February 14 request, the ISRP reviewed a response for the Tucannon River Programmatic Habitat Project (#2010-077-00). This project is proposed by the Snake River Salmon Recovery Board. The goal of this project is to restore habitat function and channel processes in the priority reaches of the Tucannon River to improve spring Chinook productivity, as identified in the 2008 FCRPS Biological Opinion.

On November 15, 2010, the ISRP completed a review of an initial proposal for this project and requested a response because the proposal did not contain enough detail to support an ISRP review ([ISRP 2010-40](#)). The ISRP specifically requested more information on:

1. Objectives: the objectives for reach-scale restoration actions, how the proposed actions will achieve the objectives, quantification of the contribution that achieving the habitat standards would make to achieving Viable Salmonid Population (VSP) goals
2. Conditions: current habitat and fish population conditions at project sites
3. Selection of habitat restoration actions: justification for a program to identify and support projects in the future, details about the composition of the review committee, the criteria they will employ in project selection and overall program structure and governance
4. Research, Monitoring and Evaluation (RME): description of the RM&E program including interaction with ISEMP and a decision framework for modifying restoration actions if sufficient improvement does not occur.

The ISRP comments below are organized by these four items.

Recommendation

Does Not Meets Scientific Review Criteria

The response did not address many of the questions raised in the initial ISRP review. Some additional information was provided in the response via linkages to various planning documents. Nonetheless, the rationale for the proposed projects is still too vague to determine whether or not they are technically justified. The proponents must clarify the hypothesized linkages between proposed restoration actions, habitat improvements and VSP parameters in the Tucannon River and how progress will be monitored. The information provided in support of the establishment of a program to select future restoration projects remains vague.

Comments

1. *Objectives: the objectives for reach-scale restoration actions, how the proposed actions will achieve the objectives, quantification of the contribution that achieving the habitat standards would make to achieving Viable Salmonid Population (VSP) goals*

The ISRP believes that the project proponents have not provided enough data to establish a scientific justification for this proposal. The ISRP would appreciate less of an emphasis on administrative aspects (as important as these may be) and more on scientific aspects. A discussion of the relationship between habitat improvements and improved VSP parameters for target species in the Tucannon River is still required. The ISRP cannot conduct an assessment of the technical merits of this proposal without this information.

In the response to the ISRP request for more detailed information, we were referred to the subbasin plan and the SE Washington/Snake River Salmon Recovery Plan. These plans do not appear to provide any readily-accessible details on the specific habitat actions that would be most effective in helping to achieve VSP objectives for the Tucannon River spring Chinook salmon. The Snake River Salmon Recovery Plan does contain some excellent information on VSP parameters and some high-level assessment of limiting factors. The presumed limiting factors are treated at a regional scale in this document. And most of the information on this topic in these plans, or in this proposal, could be applied, at a broad conceptual level, to any subbasin in the Columbia Basin (e.g., more wood, to a point, is good; less fine sediment is good, etc.). That is, as the proposal reads, it says “Undertake this suite of actions, and based on the literature, river function will be improved or restored and VSP parameters will improve.” Ecosystem functions may well be improved, but there is not much to review at the level of the Tucannon River for scientific content unless the proponents articulate how they believe categories of actions applied at specific locations will result in improved habitat conditions that lead to improved spring Chinook VSP parameters. Hypotheses and conclusions and more detailed

information must be supported with summarized data and scientific literature relevant to the site to assist the scientific review process.

The ISRP specifically requested information on the process applied in selecting the 18-mile reach where restoration actions are proposed. The response indicated that three criteria were used *“(1) they are within the MSA ... (2) they are currently constrained by anthropogenic factors, i.e., they have the largest restoration potential or they suffer from legacy impacts (historic LWD removal and channel straightening), and, (3) they are large enough to collectively improve conditions to the magnitude needed.”* The location of the restoration project within the MSA makes sense. But the MSA is 34.5 miles long. Why was this 18 mile reach selected? In addition, within the 18 miles, wood addition efforts would occur on a total of 8.8 miles. How were candidate wood addition sites selected? The second and third selection criteria suggest that this reach may have been selected because it was considered the most severely degraded. If this is the case, no information was provided to support this assertion. Regardless, degree of degradation alone is not sufficient to justify restoration actions if the restoration potential has not been assessed. The details as to how the potential level of benefit to the population was determined for a specific project reach needs to be included in the proposal.

The proponents suggest that because this proposal is a large-scale effort, it is impractical, in some cases impossible, to identify desired conditions for limiting factors on a site-by-site basis. This claim is used to support the application of generic target conditions derived from the scientific literature (i.e., properly functioning conditions). It does not appear that any attempt was made to assess the appropriateness of these targets for the Tucannon River. The ISRP indicated in their initial review of this project that habitat objectives for this project would best be characterized as a desired range of conditions, developed from an understanding of the processes operating in the specific project reach. For example, maintaining temperatures less than 72° F and two pieces of large wood per channel width does not guarantee that natural ecosystem functions will be achieved nor that the limiting factor within the target life stage will be addressed for the reach in question. It is the re-establishment of the processes of material and energy transfer across the watershed that enables the formation and maintenance of productive habitat.

In the absence of site-specific criteria, the proposal should at least attempt to justify the application of generic criteria to the Tucannon River project site. No documentation is provided in the response or in any of the planning documents relating to the derivation of the criteria for desired wood level, proportion of confined channel, embeddedness, or water temperature. The response further makes the argument that because the desired habitat conditions had been developed through the subbasin planning process, the project sponsors have no ability to alter these goals to match specific conditions at the project site. This suggests that habitat remedies may be applied which do not address the real problems. The ISRP wishes to know if the habitat objectives are achievable given the physical template and climate of the Tucannon River watershed. This information is needed in the proposal. Whether they are negotiable or not is irrelevant if the target conditions are unattainable and/or unsustainable.

Linkages between the actions to be implemented and the expected responses are unclear. The ISRP asked for a more detailed description of the hypothesized effect of the restoration projects on habitat conditions and the consequent response of the fish. This information was not provided. Rather the response simply makes the assertion that the proposed actions will enable “properly functioning conditions” to be attained and that will be good for the fish. The linkages between some of the actions and the expected habitat response actually seem counter-intuitive. For example, the claim is made that moving levees away from the channel will cause a reduction in embeddedness. The process by which this improvement would be generated is not explained. In fact, moving the levees away from the channel edge may reduce the sediment transport capacity of the channel at high flow and lead to sediment deposition. Therefore, unless actions are taken to reduce sediment delivery to the channel, moving the levees actually

may increase embeddedness. The relationship between levee relocation and temperature regimes is also vague. If moving the levees increases hyporheic exchange, a reduction in temperature could result. However, this hypothesis is not posited in the proposal nor is there any information provided about hyporheic processes along the project reach to support the potential for this outcome.

2. Conditions: current habitat and fish population conditions at project sites

The development of a process for setting priority to habitat projects and developing basin and reach-specific habitat standards for the Tucannon River requires information on the current status of fish populations and habitat in the system. The recovery plan does contain information on current status of the fish populations and objectives for VSP parameters. However, there is very little description of current habitat conditions within the project reach provided in the proposal, the response, or the supporting planning documents. The selection of a project site and identification of appropriate restoration actions requires a thorough understanding of current habitat conditions.

3. Selection of habitat restoration actions: justification for a program to identify and support projects in the future, details about the composition of the review committee, the criteria they will employ in project selection and overall program structure and governance

The response provided an adequate description of the review program structure and composition of the review committee. There seems to be a qualified review team in place. However, the details about the review process and criteria to be used in selecting future projects were not sufficient for technical review. The response indicates that the three criteria used to select the projects to be executed under this proposal will be applied to select future projects. As noted previously, these criteria lack specificity and may make some unsupportable assumptions about restoration potential. The requirement that all future projects be within the MSA represents a good starting point. However, the process should include criteria that enable the comparison of restoration potential among various sites within the MSA. Degree of degradation as the key criteria for finer scale assessment of project potential is not appropriate; restoration potential is not the same as degree of degradation from human activities. The gains in VSP parameters that can be achieved by restoring habitat conditions at a site should be the primary factor in identifying future projects.

The response seems to imply that the project sponsors recognize there are some deficiencies in the prioritization scheme by including an option for professional judgment to override project score against the three ranking criteria. The response states “... a project can score relatively high solely based on the objectives stated in the proposal but occasionally local technical knowledge and familiarity with project outcomes warrants a professional technical recommendation to fund a project that happened to score lower.” The inclusion of this option

in the prioritization process indicates that the criteria being used to rate projects are incomplete or inappropriate, or can be overridden by subjective judgment.

4. *Research, Monitoring and Evaluation (RME): description of the RM&E program including interaction with ISEMP and a decision framework for modifying restoration actions if sufficient improvement does not occur.*

Development of a monitoring program to complement the habitat restoration program is essential to gauge progress against habitat and VSP objectives. The lack of adequate information for the Tucannon River was an issue identified during subbasin planning. The draft RM&E plan in the Tucannon subbasin plan appendices (2004) concluded that *“the quality of data used within the EDT attributes is inadequate.”* Better information was also needed in related to VSP parameters:

Two of the draft recommendations in the draft RM&E plan were

1. “Fund and implement habitat inventories to collect data necessary to fill data gaps for attributes with high EDT model leverage and evaluation of progress toward subbasin plan objectives.”

“Continue to fund existing monitoring and evaluation actions within the subbasin that fulfill critical VSP data needs.”

2. “Fund and implement additional actions to complete basic population status monitoring needs for the sub-basin (e.g., monitor adult steelhead escapement into the Tucannon basin. To fulfill this example, the specific actions or improvements listed below may be needed.
 1. Adult counting or trap at Starbuck Dam
 2. Smolt trap in upper Tucannon above hatchery Intake Dam

Additional VSP related action may be required/recommended as the full RME plan is completed.

The response to ISRP comments relating to RM&E did not provide enough detail regarding progress against these recommendations since 2004.

In the response, the proponents directed the ISRP to a series of documents outlining proposed RM&E activities. Included are possible linkages with ISEMP and CHaMP. No specifics about the linkages with these programs were provided, apparently because these details have yet to be fully developed. To date CHaMP has not been initiated in this drainage system and the form in which it will be implemented, including the sites to be included in the initial sampling, remain undecided. Therefore, there is a chance that the Tucannon River will not be included in the CHaMP program, at least initially. The linkage with ISEMP also appears to be less than fully

certain. If these relationships do materialize, the Tucannon River could have a very strong RM&E effort. Given the current uncertainty about these associations, however, it would be wise to consider what other alternatives are available to evaluate project effectiveness, and in particular, their biological effectiveness and fish response.