Independent Scientific Review Panel
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Memorandum (ISRP 2009-35) **August 18, 2009**

To: W. Bill Booth, Council Chair

From: Eric Loudenslager, ISRP Chair

Subject: Final review of the Confederated Tribes of the Warm Springs Reservation Fish Accord Proposal: Deschutes River Restoration Program, #2008-301-00

Background

This memo is the ISRP's final review of the Confederated Tribes of the Warm Springs Reservation proposal, Deschutes River Restoration Program, #2008-301-00. This project is called for in the Columbia River Fish Accords. The proposal states that "the program will focus on projects aimed at improving instream habitat along with holistic watershed restoration directed at factors limiting salmonid production. Projects will target four broad limiting factors including habitat complexity and quantity, fine sediment, waters temperature, and altered hydrology."

On December 15, 2008, the ISRP completed its initial review of the original proposal and sent a memo to the project proponent requesting additional information that would allow us to complete our scientific review. In that review, we recommended that:

> The project description was overly general and lacked the specificity needed to provide the basis for a scientific evaluation of its merits. It should be re-drafted to provide this specificity. A revised proposal should build on habitat inventories and limiting factor analyses already completed for the Deschutes subbasin to demonstrate that proposed actions are appropriate and likely to succeed in the area of interest. Using a relatively new approach such as simulated beaver ponds holds promise, but such a restoration action should be set up as an experiment with suitable control sites for comparison.

On July 28, 2009, the Council sent us the project proponents' response and requested our review, which is provided below.

Recommendation

Does not meet scientific review criteria

The ISRP believes that there can be benefits to this effort. However, as stated in our original review, greater detail is needed before a scientific assessment of the proposal can be completed.

Generally, in order to provide the Council, BPA, and project proponents with a helpful scientific review of a proposed project, the ISRP needs (1) a reasonably detailed description of what will be done and where the restoration activity will be implemented, (2) an explanation or rationale for why this action will be taken at the location in question, (3) a description of how the action fits into existing restoration priorities that have been established by subbasin plans, species recovery plans, watershed plans, state and Tribal plans, etc., (4) as completely as possible, an explanation of the benefits of the proposed project to target species, and (5) an outline of what will be done to monitor the habitat improvement and population recovery objectives of the restoration action. Without this information, we are unable to assess the merits of a project on scientific grounds.

The project proponents' response to the ISRP's request for more details (so we could review the proposal scientifically) still falls short of providing the information we need. The concerns regarding the focus on the four limiting factors (habitat complexity and quantity, fine sediment, water temperature, and altered hydrology) were partially addressed, although there was no direct linkage of these four factors to the restoration actions identified in the original project description, particularly regarding sediment and water temperature. The ISRP needed to know about the actual sites, not just overall characteristics of the streams in which they were located. The potential benefits to focal species were discussed only in a very general manner. The RM&E section remained too vague to review. Despite the fact that this proposal is for restoration projects and is not primarily for research or monitoring, the effectiveness of the planned projects need to be assessed in order for future restoration efforts to be improved. There were some references to other monitoring programs in the Deschutes River subbasin that would handle the monitoring duties for this project, but there was no clear statement that these programs were willing to take on the monitoring efforts at all 10 sites. A long-term project that expects to repeat specific practices must be able to document the effectiveness of those practices via adequate effectiveness monitoring. The ISRP suggestion that the constructed beaver ponds be treated as an experiment appeared to be dismissed without explanation, and the response was devoted almost entirely to justifying why the ponds would become part of the supplementation program instead of describing what could be learned from the constructed ponds.

In particular, we needed more information on what would be done at the following locations (from the original narrative). The response did not provide enough specificity for us to judge the individual projects, or any potential additive effects of the projects, from a scientific standpoint.

1. Trout Creek Fish Habitat Restoration Project
2. Squaw Creek Instream and Riparian Habitat Restoration Project
3. Middle and Upper Deschutes River Instream and Riparian Habitat Restoration Project
4. Lower Crooked River Instream and Riparian Habitat Restoration Project
5. Lake Creek and Link Creek Fish Passage Improvement Project
6. North Fork Crooked River Instream and Riparian Habitat Restoration Project
7. Beaver Creek Instream and Riparian Habitat Restoration Project
8. Tygh and Badger Creek Habitat Restoration Project
9. Lower Deschutes River Instream and Riparian Habitat Restoration Project

10. Pelton Round Butte Fish Passage Restoration Project

Without these details, we regret that we must reaffirm our conclusion from the first review. We believe the best course of action is to submit a new proposal description that addresses the five information points identified above, with more specifics about these 10 project locations.

Specific Comments

We asked for a revised proposal, but instead, the response was organized under four points. We have maintained that organization in this review, but continue to believe that a totally rewritten proposal will be the most effective means of resolving the issues described below and providing a more logical flow: from limiting factor identification to setting priority actions and locations, to monitoring and evaluation.

Limiting factors

The ISRP indicated in the initial review that insufficient justification was provided on the limiting factors to be addressed and on the expected benefits to focal species as a result of improved conditions. The response provides some helpful additional information on limiting factors but is still too general for a scientific review. There was some specific information provided about tributaries that have documented issues with high sediment levels, water temperature or lack of large wood, but a more comprehensive description of how these problems are distributed across the area covered by this proposal and the specific causes of these problems at a given site would have offered more complete justification. As the project proponents emphasize in their response, degraded conditions related to sediment, water temperature, flow and channel complexity are ubiquitous problems throughout the Columbia River Basin. However, this does not mean that they are the primary issues restricting fish production at all potential project locations within the Warm Springs Reservation. The location and ordering of restoration activities is key, but was not addressed, nor was there sufficient narrative evidence presented that fish would have access to restored areas.

The response did not provide sufficient detail about what restoration steps would be taken to improve habitat conditions, i.e., were the actions primarily aimed at correcting the presumed limiting factors in the streams themselves (through, for example, large wood placement or riparian plantings to increase shade), or was the emphasis focused on addressing the causes of the degradation (through, for example, livestock exclusion from riparian areas or road decommissioning)? This is important because it is stated that "*Restoration actions were implemented through this project over a decade ago, but many of these habitat improvements cannot be found today and were likely lost or compromised during flood events*" and the ISRP is concerned that failure to address the root causes of environmental degradation will lead to continued investments in high-maintenance instream projects whenever a large natural disturbance event (flood or wildfire) occurs. The majority of the proposed projects are instream, which are unlikely, alone, to address limiting factors of temperature and sediment.

Benefits of the work

This issue was not fully addressed in the response. A description of the Potter's Pond Mill site did attempt to explain why the proponents felt that a project at this location had the potential to generate a significant response from salmon. But this was the only example relating to expected biological response. The fact that appropriate sediment levels, water temperatures, flow levels and channel complexity conditions are important to the focal fishes does not provide any assurance that the proposed projects will be located at sites of maximum significance to these target species. The project might be more successful if restoration were focused in particular reaches to demonstrate the effectiveness of the approach.

Monitoring

The RM&E section of the response lacked adequate details for a scientific review. Despite the fact that this proposal is not for research, the effectiveness of the planned projects need to be assessed in order for restoration efforts to improve in the future. The authors indicate that habitat conditions before and after project implementation will be monitored, but no specifics of what will be measured, or how, are provided. Measuring biological response to project implementation is complicated and expensive and, thus, may not be appropriate as a component of this program. But there is an obvious opportunity to coordinate projects implemented under this program with the fish monitoring activities that are occurring on the Warm Springs Reservation. Such collaboration could enable the generation of useful information about biological response to this restoration program without placing a large monitoring onus solely on the proponents. The response states "*Fish and population monitoring is ongoing and conducted by another Program within the Tribal Fisheries Department under a separated BPA contract*", but again this statement does not provide sufficient information for scientific review. At the sites proposed for restoration under this project, what aspects of the focal species are likely to be measured and how will results be evaluated and reported? Goals such as reducing sediment inputs should be evaluated with actual sediment data, not fish inventories (which can be affected by many other habitat factors).

Beaver Ponds

There are two issues that are confounded in this section: stocking of hatchery fish and artificial beaver dam construction. This issue is not solely funding, but of conflicting intents. The ISRP suggestions regarding the constructed beaver ponds were not addressed other than to indicate that stocking of these ponds with hatchery fish would not be funded under this project. However, it was very evident from the response that the intention is to use some (all?) of these ponds as acclimation sites for hatchery Chinook salmon. Regardless of whether or not this stocking is supported through *this* proposal, there are potential ecological effects associated with introducing large numbers of hatchery fish into a habitat that was ostensibly created to benefit naturally spawning and rearing species. If the beaver ponds are going to be used as acclimation sites, the nature and severity of these impacts should be assessed. If pond construction is only to support stocking, then such a project is counterproductive to the intent of the overall project and would

best be implemented elsewhere. If ponds are designed to be used as acclimation sites, an evaluation of the effect on wild fish and other aquatic biota with and without hatchery fish should be incorporated into the design.

As the ISRP noted in their initial review, constructed beaver ponds have not been widely used in restoration projects in the Columbia Basin and this project offers an opportunity to evaluate their effectiveness to benefit naturally spawning fish. Constructed beaver ponds should be implemented in an experimental design that enables the evaluation of impacts on hydrology, water quality and fish populations over time, as well as the maintenance needed to avoid the hazards of failure when not maintained by an active beaver population.

Response Clarity

The wording of the response was unclear or incorrect in some places. For example, the Limiting Factors section: "*Water chemistry and the reduction of total nutrients, especially marine derived nutrients in the spawning and rearing streams across the Northwest is an often overlooked factor critical to recovery as well*," which seems to imply that reducing marine-derived nutrients would be beneficial, although we doubt that was the intent. In another example: "*The ISRP comment above asks the Tribes employ a BACI type statistically valid monitoring associated with each project*," our original assessment did not specify what type of monitoring design to use. The response contained multiple grammatical and typographical errors, in some cases severe enough to make it unclear what the author intended to communicate. A thorough proofreading would have helped to alleviate this problem.