Independent Scientific Review Panel
for the Northwest Power & Conservation Council
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Memorandum (ISRP 2009-4) **February 26, 2009**

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

From: Eric Loudenslager, ISRP Chair

Subject: FY 2007-09 Follow-up Review of Wenatchee Complexity Project, 200732500: Sites CMZ 11 and 4.

Background

At the Council's February 3, 2009 request, the ISRP evaluated documentation provided by the Chelan County Natural Resource Department to justify restoration actions on two project sites by the Wenatchee Complexity Project, 20073250. Chelan County provided this information in response to earlier ISRP reviews, which requested more details to allow the ISRP to assess the value of the project on scientific merit (ISRP 2008-13[1]). In that review, although we preferred a complete plan for all sites, we noted that to allow for sequential implementation of the project, we would review support documents for each site as they became available. Chelan County took the sequential approach, and our review of support documents for two sites, CMZ 11 and CMZ 4, follows below. Reviews for the three other sites are anticipated in the late summer and fall 2009.

Recommendation

Meets Scientific Review Criteria (Qualified)

The CMZ 11 supporting documents are sufficient for the ISRP to recommend this project. However, as Chelan County acknowledges, the CMZ N4 design and design report have not yet been finalized, nor has the CMZ N4 effectiveness monitoring plan been fleshed out. For this reason the ISRP qualifies its assessment of CMZ N4 pending completion of the CMZ N4 design and submittal of a monitoring plan for CMZ N4 that includes both implementation and effectiveness monitoring components.

[1] www.nwcouncil.org/library/isrp/isrp2008-13.htm

Summary

Chelan County has done a good job of responding to the ISRP's requests for information. In particular, they are to be commended for using survey data from similar sites in the area to project the biological benefits of the CMZ 11 and CMZ N4 side-channel enhancement projects. Based on the information submitted to us, it appears that these sites will primarily benefit spring and summer Chinook and coho salmon.

It is unfortunate that the ISEMP Program is not likely to include the Wenatchee Complexity sites in its effectiveness monitoring design (p. 39). However, there is still a need to monitor fish use of the restoration sites, particularly because the number of fish estimated to be produced at each site annually (ca. 300-500 salmonids) is somewhat low relative to the overall costs of the projects, and if for some reason this anticipated use does not occur, additional studies should be undertaken to determine why. Chelan County has demonstrated a good faith effort to increase the frequency of effectiveness monitoring from 5-yr intervals to 2-yr intervals, but the ISRP strongly encourages yearly snorkeling surveys during appropriate low-flow periods. The possibility of the sites being monitored by the Yakama Nation was mentioned, but it was not completely clear how that work would be funded.

Previously we asked for information on five items:

1. an adequate description of what will be done, including the details of anticipated habitat benefits;
2. identification of focal species and some quantitative expression of how the project would contribute to the species' recovery;
3. an ecological justification of the project, often achieved by citing its importance to successful implementation of the appropriate subbasin plan and by showing linkages with ongoing recovery programs in the area;
4. evidence of landowner cooperation, usually documented by reference to conservation easements and other long-term agreements; and
5. a thorough description of the post-implementation monitoring plan, including the procedures used to verify the project's habitat benefits and biological effectiveness.

We also provided a project matrix with each site in rows and the criteria above in columns. Project sponsors used that matrix to identify where information was in the current submittal and when additional information is anticipated in the future. Our table has been combined with theirs and a row added for indicating whether the criterion has been adequately addressed in this submittal. A blank cell in the matrix indicates that no details were given to the ISRP.

Table 1. Matrix of Wenatchee Complexity information provided and to be provided[1] and ISRP Review findings by site.

Site	Implementation plan	Design & Design Report	ID focal species benefits	Ecological justification	Landowner agreement	Monitoring plan[2]
Site CMZ 11						
Sponsor	PISCES SOW, SOW clarification	Alternatives Analysis, Designs, Design Report, As-built surveys (2)	Included in the Response document	Included in the Response document	WSDOT	Revised monitoring plan (separate from design report)
ISRP 2008-13	X[A]	X[A]	X[B]	X[C]	X	X[D]
ISRP 2009	**X**	**X**	**X**	**X**	X	**X**
Site CMZ N4						
Sponsor Info	PISCES SOW, SOW clarification	Alternatives Analysis, Designs, Design Report with revised Monitoring Plan (January 2009), Geotechnical report, USFS comments on September 2008 draft designs with response from ICF Jones & Stokes	Included in the Response document	Included in the Response document	WA State Parks, WSDOT, USFS	Included in design report (January 2009)
ISRP 2008-13			X[B]	X[C]	X	
ISRP 2009	**X**	**In progress**	**X**	**X**	X	**Not yet complete**
Site CMZ 6						
Sponsor Info	PISCES SOW, SOW clarification	Alternatives Analysis cover letter, Alternatives Analysis, Topographic survey, Wetland report; Design & Design Report available Summer 2009	Available Summer 2009	Available Summer 2009	Available Summer 2009	Available Summer 2009
ISRP 2008-13				X[C]		

Site	Implementation plan	Design & Design Report	Focal species benefits	Ecological justification	Landowner agreement	Monitoring plan[2]
Site CMZ 17[3]						
Sponsor Info	PISCES SOW, SOW clarification	Alternatives Analysis cover letter, Alternatives Analysis; Design & Design Report available Fall 2009	Available Fall 2009	Available Fall 2009	Available Fall 2009	Available Fall 2009
ISRP 2008-13				X[C]		
Site CMZ 20[3]						
Sponsor Info	PISCES SOW, SOW clarification	Alternatives Analysis cover letter, Alternatives Analysis; Design & Design Report available Fall 2009	Available Fall 2009	Available Fall 2009	Available Fall 2009	Available Fall 2009
ISRP 2008-13				X[C]		

[1]Additional materials include the Channel Migration Zone study (Jones and Stokes 2004) and supporting documentation for population estimates.
[2]CCNRD will continue to coordinate with ISEMP to determine if they can monitor the Wenatchee Complexity projects.
[3]Due to funding constraints, either CMZ 17 or CMZ 20 will be designed for construction.

ISRP 2008-13 Footnotes
[A] It was unclear from the supporting information if, in fact, this project has already been implemented. According to the project sponsor's response, restoration of CMZ 11 is scheduled for 2008.
[B] Focal species benefits were described in qualitative terms only. It might be possible to estimate how many fish could use these sites based on data from other side channels and tributary junctions in the area.
[C] In general terms the ecological justification has been summarized in the 2004 Jones & Stokes Final Report.[2] However, each site needs additional information on specific habitat condition (see suggestions in text below).
[D] See suggestions for the monitoring plan below.

[2] Jones & Stokes. 2004. Chelan County Natural Resource Program, Final Wenatchee River Channel Migration Zone Study - Phase II. April 16. (J&S 01243.01) Bellevue, WA. Prepared for the Chelan County Natural Resource Program, Wenatchee, WA.

Specific ISRP Comments on 2009 Supporting Documents

Although potential target species included spring Chinook, summer Chinook, steelhead, rainbow trout, bull trout, coho salmon, sockeye salmon, and westslope cutthroat trout, it seems apparent from the fish survey data supplied in the supporting documents that these side-channel improvement projects will primarily benefit Chinook and coho. There was relatively little data to support the use of these areas by other species, with the possible exception of steelhead spawning in some of the Nason Creek side channels. We also noted that salmonids were often in the minority among the fish communities occupying similar mainstem sites in the Wenatchee and Entiat River subbasins, with various minnows and suckers being the numerically dominant fishes. We also noted that brook trout may be present in the watershed. It would be worthwhile to carefully monitor this non-indigenous species because of possible effects on native salmonids.

Although project plans were sufficiently detailed, the effectiveness monitoring procedures in the supporting documents still lacked some detail. It was not apparent to the ISRP who would actually do the fish snorkel surveys, although the project sponsors have approached the ISEMP Program (which probably will not monitor these sites) and the Yakama Nation (which may be willing to do it). In any case, the ISRP reaffirms its belief that biological effectiveness monitoring is critical to documenting project success. Because monitoring plans for CMZ N4, CMZ 6, CMZ 17, and CMZ 20 have not been finalized, we repeat our suggestions from ISRP 2008-13 (with some editing) as items that deserve serious consideration in formulating monitoring protocols for these sites:

- A 5-year interval between surveys of channel condition is too long; more frequent surveys are needed. Re-examining the sites after exceptional storms should indicate whether the channel survived high flows as hoped.
- Spring/summer visits to the side channels in years 1, 3, and 5 post-construction to determine if sediment deposits block fish entrance or egress should represent a minimum effort. More frequent visits may be needed if large storm events occur.
- Monitoring depth at the inlet and outlet ends of the side channels during low and high flow periods is worthwhile, but it would also be very helpful to document water depth throughout the channels themselves. If the channels are experiencing sediment deposition, it would help to know whether “deep water” winter habitat is being lost to channel aggradation.
- Surveys for fish location should be carried out annually. At a minimum, surveys should be conducted in mid to late summer during low flow periods (or when water quality parameters such as dissolved oxygen or temperature indicate lethal conditions) and again during periods of winter base flow. Yearly surveys are needed, as fish density will be influenced by spawning recruitment, and use of the side channels is likely to vary from year to year. It would also be useful to know if fry or pre-smolts are being stranded in the channel.
- Vegetation surveys can follow standard transect protocols. The plans should state how often these will be conducted and what features of the vegetation will be

measured, especially as the vegetation is being relied for erosion reduction. We recommend that the success of riparian plantings be monitored 1, 3, and 5 years post-construction.

- Sediment – erosion and deposition – studies in years 1, 3, 5 and 10 should establish whether the conclusions about the morphological stability of this reach are correct. The mainstem Wenatchee River has been severed from much of its floodplain and has incised to the point that only rare high flow events cause water to enter the historical floodplain. Only if the river has incised to the point that further morphological change is limited by constraints such as bedrock outcrop(s) or man-made barriers, is channel stability likely to prevail. Nevertheless, if the bypass channel is too large, sediment deposited by flood flows may aggrade the channel to the extent that remedial work is needed. If the channel is too small and the velocities are high during flooding, erosion can be expected.