



**Independent Scientific Review Panel**  
for the Northwest Power & Conservation Council  
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**Memorandum (ISRP 2010-13)**

**May 5, 2010**

**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 Site CMZ 20 of the Wenatchee Complexity Project, 200732500

## **Background**

At the Council's November 6, 2009 request, the ISRP evaluated documentation provided by the Chelan County Natural Resource Department to justify restoration actions on one of four proposed project sites for the Wenatchee Complexity Project, 20073250. Chelan County provided this information in response to earlier ISRP reviews, which requested more details to allow us to assess the value of the project on scientific merit ([ISRP 2008-13](#)<sup>1</sup>). 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.

In February 2009, we found the support documents justified restoration actions at site CMZ 11 ([ISRP 2009-4](#)<sup>2</sup>). In a July 2009 review we found the restoration actions at site CMZ N4 were scientifically justified ([ISRP 2009-29](#)<sup>3</sup>). In November 2009, we found the restoration plans for site CMZ 6 met scientific review criteria, but we qualified our recommendation that the monitoring, evaluation, and reporting aspects of the project needed improvement ([ISRP 2009-48](#)).

On April 16, 2010, the Council sent us Chelan County's response package for the fourth site, CMZ 20, including a specific response document, a construction narrative that includes the permit-ready designs and monitoring plan, a signed landowner willingness form, the U.S. Army Corps Specific Project Information Form (SPIF), and monitoring information for CMZ 11 and CMZ N4. The revised CMZ 6 monitoring plan is also included in the response package.

A fifth site, CMZ 17, will not be addressed under this BPA-funded project.

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<sup>1</sup> [www.nwcouncil.org/library/isrp/isrp2008-13.htm](http://www.nwcouncil.org/library/isrp/isrp2008-13.htm)

<sup>2</sup> [www.nwcouncil.org/library/isrp/isrp2009-4.htm](http://www.nwcouncil.org/library/isrp/isrp2009-4.htm)

<sup>3</sup> [www.nwcouncil.org/library/isrp/isrp2009-29.htm](http://www.nwcouncil.org/library/isrp/isrp2009-29.htm)

Our review of the supporting documents for site CMZ 20 follows below.

## **Recommendation**

### *Meets Scientific Review Criteria (Qualified)*

The project proponents have done a generally good job of responding to the ISRP request for more information. The qualification is that the CCNRD should complete the process of obtaining stakeholder feedback on the CMZ 20 proposal and securing the final permits before work begins. The ISRP encourages CCNRD to look for opportunities to strengthen the monitoring of the side channel large woody debris structures (including periods when the side channel is connected to the mainstem) and to carefully monitor the success of the riparian revegetation efforts.

## **Comments**

In our October 24, 2008 memo, we asked for information on five items for each site:

- 1. An adequate description of what will be done, including the details of anticipated habitat benefits*

The project plans and diagrams were thorough and helpful, and the project proponents state that the plans are essentially complete. The work at this site is focused around installing four large woody debris (LWD) structures in a seasonal side channel near Leavenworth. The side channel is inundated when discharge in the Wenatchee River exceeds approximately 5,000 cfs, so this project will provide habitat benefits during high flow periods (spring runoff). However, the main objective of the project proponents is to provide increased cover for juvenile salmonids stranded in several large pools in the side channel after flow in the Wenatchee River recedes. Approximately 400 feet (16%) of the 2,500 foot long side channel will be affected by the habitat structures.

The response states that juvenile salmonids are stranded in the existing side channel when river discharge drops below 5,000 cfs. Currently it is assumed that the vast majority of these stranded fish die, primarily because they lack cover from predators. The proposed engineered log jams, each of which will consist of 10-20 ft long logs and branches, are meant to improve the survival of stranded Chinook salmon, steelhead, and bull trout. The work will not, however, remedy the stranding itself. Project proponents also believe that the habitat structures will also enhance conditions for other native aquatic species, including reintroduced coho salmon. The ISRP hopes that CCNRD will also be alert for the presence of unwanted non-native species.

2. *Identification of focal species and some quantitative expression of how the project would contribute to the species' recovery*

The prediction of fish use of CMZ 20 is based on extrapolation from fish use of similar habitats in the area. Data for nearby sites were obtained from Forest Service research and contacts with other technical specialists in the area, particularly snorkel observation data from the Wild Fish Conservancy in nearby Icicle Creek. The proponents note that neither the ISEMP nor SRFB-supported projects in the area were similar enough for comparison with this site. Projected benefits to Chinook, coho, steelhead, and bull trout are given in Table 7. According to this table the greatest benefits by far (98%) are projected to accrue to underyearling coho and Chinook salmon. The ISRP also notes that the incremental annual production in terms of additional fish supported by this side channel LWD project is fewer than 200 fish. Although bull trout are identified in the response as a focal species, Table 7 predicts no bull trout use of the CMZ 20 site after project implementation.

The project proponents are to be commended for attempting to provide a quantitative estimate of the benefit to fish of this project. They generated an estimate of the number of juveniles of several species that would be supported by each added structure. They used fish density and species composition data collected on Icicle Creek and the Entiat River to represent the characteristics of the fish community in the side channel where LWD will be installed. However, the data from the Entiat River and Icicle Creek were collected from flowing stream reaches, not isolated side channels. Density and species composition of fish in the side channel could differ considerably from that in flowing channels. Therefore, the application of these data to the project site is uncertain.

Expressing the potential benefit as the number of fish that will use each added structure may not be the best metric to represent the fish response to this project. The primary benefit anticipated from this project is an increase in the survival of juvenile salmonids stranded in the side channel where the LWD will be added. Data suitable to generate an estimate of survival improvement may not be available from the Wenatchee River or nearby watersheds, but research on survival benefits associated with LWD addition is available from other locations and could be used to generate a rough estimate of the potential survival improvement. This approach should be considered in future proposals for projects of this type.

An estimate of the potential benefits to fish during times when the side channel is connected to the mainstem was not included in the proposal. However, it seems possible that this may be a consideration as important as the survival benefits for stranded fish. Low-velocity habitat associated with the LWD could provide refuge areas for juvenile fish, possibly even adult spring Chinook or steelhead, during periods of high river flow.

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*

The ecological justification is grounded in the project's relationship to hypotheses about conditions in the Lower Wenatchee River in the subbasin plan. Importance is judged on a qualitative basis – responses to the habitat creation are rated as low-moderate-high (Tables 9-15). The majority of supporting statements justifying LWD addition to this side channel are general comments about the lower river floodplain and the need to increase habitat complexity and provide high flow habitats. The ISRP feels that a little more attention could have been given to justifying actions at the CMZ 20 site itself, including a statement of why year-round connection to the river was not part of the plans.

The project proponents also could have provided a more comprehensive ecological justification by including some discussion about the relationship among the various CMZ projects that have been implemented under the Wenatchee Complexity effort. All these projects have restored floodplain habitats, and they are in relatively close proximity in an area where most floodplains have been developed and natural riverine processes have been impaired. Some quantification of how much potential floodplain habitat existed historically, what exists now, and the amount of restored floodplain represented by all the Wenatchee Complexity projects would provide some context for the CMZ 20 project.

4. *Evidence of landowner cooperation, usually documented by reference to conservation easements and other long-term agreements; and*

The proponents have done a good job of preparing designs, obtaining permits, and seeking stakeholder comments, although the response notes that final permits from the relevant agencies have not yet been obtained. The permitting process, according to the response, is 70% complete.

5. *A thorough description of the post-implementation monitoring plan, including the procedures used to verify the project's habitat benefits and biological effectiveness.*

The proponents have heeded ISRP comments on other CMZ projects regarding the need for more frequent and multi-year surveys (e.g., [ISRP 2009-4](#); [ISRP 2009-48](#)), and we are pleased that a five-year monitoring plan (Table 4-1) is proposed. The summer water temperature monitoring will be important to documenting this project's effectiveness, and we recommend that temperature loggers be used in each of the five post-implementation years, in addition to the fish and revegetation effectiveness studies that are planned for one, three, and five years after treatment.

We also would urge the proponents to continue to search for an opportunity to incorporate additional fish monitoring into this project. The fact that there was essentially no information available on the density or species of salmonid fishes using side channel habitats in the system clearly indicates that this type of information is needed. Assessing whether or not the LWD additions result in a survival benefit also could be done relatively easily and would provide some direct evidence of the biological effectiveness of the project.