

Data Submitted (UTC 11): 2/13/2021 12:36:42 AM

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Comments: Chelan County Natural Resource Department in partnership with Bonneville Power Administration is developing Conceptual Designs for Reach 1 and 2 of the Upper Wenatchee River (RM 35.6-38.6) to improve instream habitat quality and floodplain and off-channel habitat connectivity. This information has been provided to the NEPA contractor, yet this information is not included in the map of proposed action activities (Figure 3.5-5. Surface Water, Roads, and Restoration Type). Work currently proposed to connect off-channel habitat in Reaches 1 and 2 constitute one of the best opportunities in the Upper Wenatchee basin to increase Spring Chinook juvenile rearing habitat by treating incision likely caused by previous log drives.

Chelan County Natural Resource Department in partnership with the Bureau of Reclamation is developing Conceptual Designs for the Lower Chiwawa River (RM 1.0-14.3) to improve instream habitat quality and floodplain and off-channel habitat connectivity. The original scope of this project was expanded to support the Aquatic Strategy for the UWPP. This information is not currently included in the map of proposed action activities (Figure 3.5-5. Surface Water, Roads, and Restoration Type).

Chelan County Natural Resource Department in partnership with Natural Systems Design and the Department of Commerce has been studying how channel incision results in a lowering of alluvial groundwater tables and loss of water storage within a watershed in the Wenatchee subbasin. This includes the development of an Alluvial Water Storage model and the potential for restoration of incised channels and floodplains. This model has been run for all the streams within the UWPP planning area and provides important information on how these aquatic systems have been altered from the historic range of variability. The current EA only notes one type of alluvial water storage in the form of BDAs but should broaden its scope to include the full suite of alluvial water storage projects identified in the model.

Regarding section 2.2.5 Watershed and Aquatic Restoration Actions of the Upper Wenatchee Pilot Project Draft Environmental Assessment,

"Instream Habitat Quality Improvement:

Both Action Alternatives include the restoration of instream habitat in Project area stream reaches where Large Woody Debris (LWD) and Pool Frequency is deficient (REI of at risk or poor) and where improvements to the impaired indicators could be made primarily with large wood supplementation. The addition of engineered log jams would increase stream habitat complexity, including the creation of pool habitat, improving LWD and pool indicators at both the site and watershed scales. Improvements would be spread throughout the Project area subwatersheds."

*Upper Wenatchee Reach 1 was rated as adequate for LWD, however lacking in key pieces of wood according to the Upper Wenatchee River Assessment App C (Interfluv 2012).

*Upper Wenatchee Reach 2 was rated as unacceptable for LWD and at risk for pools according to the Upper Wenatchee River Assessment App C (Interfluv 2012). However it was rated as adequate in Appendix B (Cramer Fish Scientists, 2019).

"Floodplain and Off-Channel Habitat Connectivity Improvement:

Both Action Alternatives include reconnecting streams to their floodplains and reconnecting off-channel habitat in streams segments where connectivity is deficient. Site-specific opportunities have been identified by stream reach. However, not all stream reaches have been surveyed for habitat connectivity; un-surveyed reaches are considered as potentially deficient and, in order to maximize restoration opportunities in the Project area. Restoration actions could occur in all stream reaches currently rated as at risk or poor for Channel Dynamics Indicators."

*Upper Wenatchee Reach 1 and 2 was rated as adequate for off-channel habitat and floodplain connectivity in

Appendix B (Cramer Fish Scientists, 2019), however the following description from the Upper Wenatchee River Assessment (Interfluve 2012) indicates that the 100 acre floodplain on river left is at least partially disconnected: "Along the landward side of the main floodplain unit (river-left, RM 37.6 to RM 38.1), there are wetted channel scars that connect to similar features downstream in Reach 1. These wetted areas are sourced by both hillslope runoff and hyporheic flow. In Reach 2, the wetted abandoned channels are silting in and discontinuous in the upstream portion. The floodplain scaring suggests that the lower portion of this reach was recently more complex than present. It is stipulated that large wood jam(s) likely influenced more dynamic channel-floodplain connectivity here. It is likely that the incision and channel simplification of this reach was accelerated by past log drives and splash dams (primarily through channel scouring and/or removal of large wood jams)".(Interfluve 2012)

Hydraulic modeling completed for the CCNRD Reach 1 and 2 floodplain project supports the Interfluve findings. In this analysis, under existing conditions the floodplain is disconnected under typical winter conditions and other low-flow periods and is only substantially inundated at Q10 and above.

The Upper Columbia Regional Technical Team's new prioritization effort has identified winter rearing, summer rearing, spawning and holding/maturation as limited life stages for these reaches. In their prioritization, Reach 2 is identified as "Unacceptable" for cover wood and temperature and "at risk" for a number of other factors including cover boulders, deep pools and pool quantity and quality. Reach 1 is unacceptable for temp and at risk for the other factors. Channel modification and channel complexity restoration are listed as action categories for Reach 2.

Inter-Fluve. 2012. Upper Wenatchee River Stream Corridor Assessment and Habitat Restoration Strategy. Inter-Fluve, Hood River, Oregon.