



Camp Creek Ecosystem Resiliency Project

2024 Project Summary

Abstract: Camp Creek is a perennial stream in the North Fork Burnt River watershed, approximately 45 miles southwest of Baker City, north of Whitney Valley on lands administered by the Whitman Ranger District of the Wallowa Whitman National Forest. The valley floor of Camp Creek was once an active floodplain with abundant beaver and willow shrubs, but historic land uses resulted in channel incision and widening causing the stream to be disconnected hydrologically from the valley floor, greatly altering conditions along the project reach and throughout the watershed. The valley floors were once a diverse network of anastomosed stream channels, wetlands, and beaver-constructed ponds that naturally stored water. Vegetation was characteristically dominated by riparian-adapted species. While characteristic riparian species are still present in locations on the valley floor (willow, aspen and alder) the vegetative community is dominated by upland species (ponderosa pine, lodgepole pine and sage brush), it lacks from its potential extent and is not resilient to wildfire or drought impacts. Stream riparian zones provide habitat for 70-80% of all wildlife species. Given water-influenced riparian habitats have shrunk from being valley wide to a narrow corridor along the stream channel, wildlife habitat is greatly reduced. The capacity of the valley bottom to store and slowly release water is also greatly reduced, altering ecosystem function. The valley no longer serves as a natural water storage reservoir, attenuating routing of water through the watershed to support higher base-flows in the summer and reduce peak flows following snowmelt floods. With the simplified nature of the valley, water is routed more efficiently creating higher, more damaging peak flows and lower summer base flows. To address these watershed issues and to increase system resiliency, this project will implement low-tech process-based restoration techniques including beaver dam analogues (BDAs) and post assisted log structures (PALS) to reconnect Camp Creek with its historic floodplain. This project will also facilitate restoration of the native willow community by fencing to exclude ungulates from seven protection areas averaging 0.80 acres in size. This is a collaborative project between the Powder Basin Watershed Council, Oregon Watershed Enhancement Board, Oregon Department of Fish and Wildlife, Oregon Department of Environmental Quality, and the Wallowa Whitman National Forest.



Picture 1: Looking downstream at a completed Beaver Dam Analogue within the lower section of the 2.5-mile Camp Creek project reach. As seen in the center of the photo, the BDA is actively slowing water and increasing lateral movement onto the inset floodplain. The pond created behind the BDA will facilitate sediment deposition and channel aggradation which will ultimately help reconnect Camp Creek with the historic floodplain.

Project Objectives: The project goal is to restore the Camp Creek aquatic and valley bottom ecosystem to provide ecosystem services of abundant cold and clean water well distributed temporally and spatially, abundant quality fish and wildlife habitat, and resiliency to wildland fire. SMART objectives to achieve this goal are as follows:

1. Reconnect 2.5 miles of Camp Creek with its historic floodplain by 2030. Reconnecting of the historic floodplain includes aggradation of the main channel, allowing activation of historic side channels and flooding at recurrence interval of 1.5 to 2 years.
2. Expedite recovery of riparian vegetation, with a focus on native willow, on 5.6 acres of riparian habitat along Camp Creek.
3. Beaver will occupy and build dams throughout the 2.5 project reach by 2030. Achievement of this objective will be facilitated by implementing objectives 1 and 2. Actions under this objective will be primarily to document Beaver activity within the project reach.
4. Improve aquatic habitat conditions for Columbia Basin Redband Trout and Columbia Spotted Frogs along 2.5 miles of Camp Creek by 2025.
5. Monitor effectiveness of restoration actions toward meeting project objectives for five years post implementation.

Project Status: Implementation of this project is currently underway with an anticipated completion date of fall 2024. During the summer of 2023, 4 youth crews, PBWC staff, and staff from the Wallowa-Whitman National Forest worked to install 48 BDAs throughout the 2.5-mile project reach. Volunteer crews at the PBWC Beaver Dam BBQ helped install 3 additional BDAs bringing the grand total to 51 completed structures. Large woody materials were also added to the stream during the summer of 2023 by PBWC staff. During 2024, PBWC staff will work with volunteers and youth crews to complete the remaining instream structures (approximately 30) and to build buck-and-pole exclosure fencing to protect riparian vegetation.

Picture 2: Posts installed across channel for future BDA.



Picture 3: Youth crews construct BDA by weaving materials through posts.

Picture 4: Fully constructed BDA from picture 2.

