



UPPER DESCHUTES
WATERSHED COUNCIL

02/10/2023

John Netto - Policy Supervisor
Pacific Region, Fish and Aquatic Conservation
U.S. Fish and Wildlife Service
911 NE 11th Ave.
Portland, OR 97232

**Re: Final Report for Whychus Canyon Restoration Project – Phase II
Award Number F17AP00508**

Dear John,

The following is the final report for the Whychus Canyon Restoration Project – Phase II funded under Award Number F17AP00508.

Background

The rivers of the upper Deschutes Basin, including Whychus Creek, Deschutes River, Metolius River and the Crooked River, were once home to steelhead trout as well as Chinook and sockeye salmon. Between the early 1960s and late 2000s, these wild runs were absent from the upper basin due to the construction of a series of hydroelectric dams on the Deschutes River near Warm Springs. With the recent renewal of the federal license for these dams, new provisions for fish passage are bringing anadromous fish above the dams for the first time in 50 years.

Whychus Creek was historically one of the most important spawning areas in the upper Deschutes Basin, responsible for up to 40% of the steelhead spawning, with the potential for up to 9,000 spawning fish. In the lower section of the creek, the Deschutes Land Trust has protected a six-mile reach of creek called the “Whychus Canyon Preserve” in addition to another 0.75 miles at “Willow Springs Preserve”.

However, portions of the creek in these reaches were channelized by the U.S. Army Corps of Engineers in the 1960s. Although portions of the reaches have recovered naturally since the 1960s, much of these reaches provides poor habitat because channelization has decreased fish habitat, increased channel incision, and eliminated the connection between the stream and the floodplain. Without stream channel and floodplain restoration, Whychus Creek and the associated floodplain habitat will not reach its full ecological potential.

Description of Work Completed

Habitat restoration work under this grant has occurred both on Whychus Canyon Preserve and at Willow Springs Preserve, both owned by the Deschutes Land Trust. At Whychus Canyon, a half mile of valley wide restoration was completed in August, 2021 with some additional planting work in Fall 2022. The project removed the berms that hemmed Whychus Creek into a straightened half mile channel. The existing channel was filled while high terraces were cut down to surrounding floodplain elevations. The project will continue to evolve as high flow events lead to preferential flow paths developing across the valley floor. Some of the work included:

- Over 1,200 trees were used to provide floodplain roughness across the valley floor until native riparian vegetation takes hold.
- 35 pools were constructed or left on site to provide deep water habitat for fish until other pools form and evolve over successive high flow events.
- Floodplain connectivity and flood accessible wetland and riparian habitat was increased from 2 acres to 9 acres and over 30,000 riparian trees, shrubs, forbs and grasses were planted.

Habitat restoration work upstream at Willow Springs Preserve started in 2019 and continued through fall of 2022. Work included:

- Pilot Pole Assisted Log Structures in the main channel and Beaver Dam Analogs in side channels were constructed in 2019. These pilot structures were meant to evaluate installation ease/dynamics of wood Pole Assisted Log Structures and Beaver Dam Analogs in Whychus Creek prior to full scale 2022 implementation. Beaver started building on individual structures and we saw geomorphic change as a result of these structures being in place. The pilot project also provided valuable insights for larger scale structure construction at Willow Springs in summer 2022.
- Over 900 trees were hauled and staged on site in preparation for restoration.
- The UDWC oversaw the first phase of project implementation using a low tech process based restoration approach in summer 2022.
- Over 900 trees were placed in stream and in the floodplain in hand-built structures pinned in by posts. 118 Pole Assisted Log Structures were constructed in stream and 28 Beaver Dam Analogs were constructed in the floodplain in 22 individual complexes.
- The channel length where this initial Phase I of restoration was completed was 0.75 miles.
- In Fall of 2022, over 3,400 riparian and wetland plants were planted within the project with additional plantings planned in successive years after high flow events affect change on the landscape as they interact with instream and floodplain wood structures.
- Over time and successive high flow events, the goal is to re-activate the floodplain and re-store process that will support dynamic channel and complex habitat evolution over 40 acres of the valley floor.

Figures 2 and 3 below highlight some of the restoration work from summers 2021-2022 at Rimrock Ranch and Willow Springs Preserve.

Figure 2. Whychus Canyon Preserve Phase IIa Restoration Summer 2021



Figure 3. Willow Springs Preserve Phase I Restoration Summer 2022



Please let me know if you have any questions or need additional information. Thank you for your continued support of watershed restoration projects.

Sincerely,

Mathias Perle
Restoration Program Manager
Upper Deschutes Watershed Council