

Final Report

MCCAW REACH FISH RESTORATION PHASE B



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Inland Empire Action Coalition

**Walla Walla County Conservation District
Snake River Salmon Recovery Board
Washington State Conservation Commission**

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MCCAW REACH FISH RESTORATION PHASE B



2015 - 2018

Summary

The McCaw Reach Fish Restoration Phase B project restored fish habitat to a section of the Touchet River east of Waitsburg, WA. It is the third phase of two other completed projects in this reach of the Touchet River. It provides Mid-Columbia steelhead rearing habitat, bull trout habitat, as well as non-listed Chinook passage and holding habitat. This project improved overall river channel complexity by increasing bar development, pool establishment, and overall stream length.

Conservation Goals



Added habitat for three species of fish:
Steelhead, Bull Trout, and Chinook Salmon



Restoring floodplain connectivity and
function, as well as increasing stream
length and sinuosity.

The Conservation Problem

In 1996 a flood event scoured rivers, removed woody debris and instream structures from the Touchet River and worsened a series of erosion processes that continue to this day on the river downstream of Waitsburg, Washington. After the 1996 flood event, the Dozier and McCaw landowners expressed concerns over loss of land, river migration, encroachment and flooding. They contacted WDFW and eventually the Walla Walla County Conservation District for assistance.



Westernmost oxbow bank erosion. Looking downstream spring of 2016.

When construction began in 2018, the site was characterized by an over-straightened channel with minimal roughness and complexity. Severe erosion of the south bank was causing the river to cut into the adjacent agricultural field. The river in this reach was a single shallow channel that was over-widened with few pools, few cover or resting areas, and with a minimal potential to recruit or hold large wood. The result was poor salmonid habitat and significant loss of productive farmland.



Westernmost oxbow bank erosion. Looking upstream spring of 2016.

About The Project



Location

This project is within the Snake River Region, located on the main stem of the Touchet River. The project addresses a major spawning area and priority area for restoration, as identified in the Snake River Salmon Recovery Plan. The Phase B project begins at River Mile 40.4 and continues upstream to River Mile 41.5.

Scope of Work

The on-site engineer directed installation of all components. The existing channel was reduced in complexity and roughness, had degraded riparian vegetation and was seriously incised in some areas. The project placed large wood features in the main channel and side channels to encourage the activation of side channels, improve overall channel complexity, increase bar deposition and stream length, and develop pools. The Walla Walla County Conservation District was responsible for permitting, construction management, change orders, re-vegetation, and bill processing.

Project partners

Partner funding was through Recreation and Conservation Office and Washington Conservation Commission. The Regional Technical Team Design Review Team was instrumental in contributing to the design approach of the project. The landowner donated consultation time, idled some farm ground for storing and staging, and contributed materials toward the project. Washington Conservation Corps assisted in harvesting and planting willow whips.



Discussion

Engineer, machine operator, and workers discuss limitations of anchoring LWD structures into bedrock.

Habitat Factors Addressed

Large Woody Debris

Installation of 200 log/rootwad stems over the length of the project provide habitat for Steelhead, Bull Trout, and Chinook Salmon.

Channel Confinement

Connects side channels and floodplain; some of the side channel will be active 12 months of the year and some will be active only during high flows.

Temperature

Helped reduce water temperature by developing pools, offering localized shade from the woody debris, and accessing the floodplain with activation of the side-channels. Previously damaged/destroyed riparian buffers are undergoing replanting in 2018/2019. These new and existing riparian plantings will continue to grow and shade the river.



Reshaping the high-water channel.



Multi-log LWD along the main channel.

Methods

Engineered Log Jams (ELJ) & Large Woody Debris (LWD)

One Box ELJ and two Bank ELJs were built in the Phase B project. These structures are different in form but similar in function as they all are intended to mimic a log jam. These structures are intended to collect and shed woody materials that are moving within the system. Some structures like the Box ELJ helps form channels and promote side channel flow, while others are more suited to provide pool habitat, high flow refuge, escapement cover, and promote local deposition.

Channel Spanning Structure

The Channel Spanning Structure extends the full width of the site's side channel and helps divert water away from the side channel during low flow periods, but allows water to enter during a high flow period.

Bank Reshaping and Stabilization

The sharply eroded bank (pictured previous page) now forms a less severe 45 degree angle and is reinforced with 10 log jam structures topped with gravel. Along this bank as well as the bank of the main channel, willow whip plantings may further retain sediment as well as grow and shade the river.



Completed Bank ELJ.



Completed Multi-log LWD before replanting.



Looking downstream: Pictured left is the Channel Spanning Structure, to the right is the main channel and Multi-log LWD.



Gravel delivery and bank reshaping.

Structures

- 1 Multi-Log LWD
49+ logs 60 tons anchor rock
- 1 Channel Spanning
150' 53+ logs 90 tons anchor rock
- 2 Bank LWD
14 logs 8.5 tons anchor rock
- 2 Bank ELJ
24 logs
- 1 Box ELJ
14 logs 30 tons anchor rock
- 10 Barb LWD
50 logs 87 tons anchor rock
- 6 Tri-structures
28 logs 20 tons anchor rock

Project Cost \$289,500

Project partners

Funding through the Washington RCO-Salmon Recovery Funding Board, and Washington State Conservation Commission

Funding and Partnerships: Snake River Salmon Recovery Board , Washington State Conservation Commission, and Landowner Jack McCaw

**Support From: Confederated Tribes of the Umatilla Indian Reservation(CTUIR)
Washington Department of Fish and Wildlife(WDFW)**