

## Final Completion Summary

This project is located in Northeast Wheeler County, within the Butte Creek Watershed, approximately 13 miles West of the town of Fossil, Oregon. 2) Structural starvation (i.e., lack of large woody debris and beaver dams/activity) and channeling straightening has resulted in hydraulic, topographic, and substrate homogeneity that offers little to no benefit to threatened salmonids. 3) This project treated approximately 9 miles of Butte Creek with multiple complexes that incorporated Beaver Dam Analogs (BDAs) and Post Assisted Log Structures (PALS) which is a Low-Tech Processed Based Restoration (LTPBR) method. The restoration plan was designed to promote natural fluvial processes that ultimately result in a dynamic ecosystem that provides benefits to the habitats within the portions of Butte Creek that are used by threatened Steelhead populations (PWPC 2005). 4) Project partners included OWEB, ODFW, CTWS, NRCS, Think Wild, OWF, Anabran Solutions, Wheeler SWCD, and two landowners.

## Background

The current hydrologic, geomorphic, biological, and ecological condition found within the Butte Creek project area is the combined result of historic human induced impacts that include intensive grazing, agricultural, and the eradication of beaver. Intensive upland grazing has decreased the retention of surface runoff and the infiltration of precipitation critical to groundwater and aquifer recharge. Additionally, historic grazing has resulted in the reduction of riparian vegetation that has been slow to reestablish on degraded streams such as Butte Creek where water table elevations have decreased and baseflow discharge is often low and intermittent. Many portions of Butte Creek have also been channelized, straightened, and realigned to valley margins in order to increase the amount of the valley bottom that is agriculturally viable. These historic stream alterations have resulted in low habitat diversity and a paucity of structural elements (e.g., large woody debris) that are an integral component of healthy – functioning riverscapes (NWPC 2005).

## Work Done

This project took a large-scale approach in implementing instream restoration to increase steelhead productivity and enhance aquatic habitat in quality and quantity. However, Wheeler SWCD staff had encountered permitting obligations and cultural resource compliance requirements that needed to be obtained before any implementation could begin. The permitting requirements were supposed to be completed during the technical assistance design set (Grant #220-8208-17308) prior to this grant application being awarded. Wheeler SWCD staff ended up spending an abundance of project management hours fulfilling these obligations to comply with Department of State Lands (DSL), United States Core of Engineers (USACE), Department of Environmental Quality (DEQ), Oregon Department of Fish and Wildlife Fish Passage Approval (ODFW), and Natural Resource Conservation Service (NRCS) Federal Programmatic. This project encountered some obstacles through the federal programmatic. This project was originally going through NOAA's SLOPES programmatic, but the project was flagged due to the scale of it, which SLOPES typically doesn't cover. Wheeler SWCD staff reached out to other local SWCD districts that have or were in the process of the same type of project to determine what federal

programmatic would be best to proceed forward with the project. Since NRCS was a partner in the project, it was determined to use their federal programmatic to complete the permitting obligations. However, with NRCS being the federal lead on this project, cultural resource compliance requirements had to be met. All cultural resource documentation was submitted and Wheeler SWCD hired out an archeologist to conduct a cultural resource survey as it was determined a formal survey was mandatory to abide by the NRCS federal programmatic. No cultural resources were found within the project area and all permitting requirements were obtained by July of 2022.

The project installed a total of 282 of structures that consisted of Beaver Dam Analogs (BDAs) and Post Assisted Log Structures (PALS) along 9 miles of Butte Creek and Deep Creek. Structures were implemented starting at the confluence of Butte Creek and the John Day River, up 8 miles on Butte Creek. Deep Creek, a direct tributary to Butte Creek, had structures implemented on 1 mile starting at the confluence of Deep Creek and Butte Creek.

In addition, there was a total of 890 riparian planting planted in Butte Creek and Deep Creek. The riparian species consisted of Willows, Black cottonwood, Chokecherry, Golden currant, Red dogwood, Wood rose, Blue elderberry, Mock orange, and White alder. The species that were planted were ½ gallon pots, 3-gallon pots, and cuttings. In the grant application, the Confederate Tribes of Warm Springs (CTWS) was to provide all planting material, protection, and labor. Due to the severe staff shortage, CTWS was only able to provide the planting materials, installation equipment (2 augers and fuel), and protective caging (mesh caging and rebar). Wheeler SWCD was able to recruit a non-profit organization out of Central Oregon, Think Wild, who was able to provide volunteers, implement the plantings, and donate 430 cuttings towards the project. Additionally, Wheeler SWCD also applied for a small grant with Oregon Wildlife Foundation (OWF) to provide additional funds for Think Wilds efforts, Wheeler SWCD staff time, and additional caging materials. Wheeler SWCD staff traveled to the CTWS nursery in Prairie City, Oregon to pick up the plantings, caging supplies, and two planting augers. These were all delivered and staged at the confluence of Deep Creek to Butte Creek, and the confluence of Butte Creek to the John Day River. Wheeler SWCD staff also provided and delivered 2 additional augers and 2 side by sides (1-Wheeler SWCD, 1-Landowner) to Think Wild to assist with transportation and equipment for implementing the riparian plantings. Plantings were implemented in two different locations, one along Butte Creek and one along Deep Creek. Riparian plantings were protected by large wildlife exclusion fencing that consisted of 5-foot-high mesh fence to protect a cluster of plantings. In addition, cuttings were also implemented in a couple of the BDA/PAL structures to see if any willow shoots would grow within the structures.

There were also two riparian exclusion fences installed. One of the exclusion fences was funded by NRCS and consisted of 4,231 feet. This fence was installed at the confluence of Butte Creek to prevent trespass cattle along the John Day River who travel the corridor and cross over during the summer months when flows are low. The other riparian exclusion fence installed modified the original fence-line by repairing 8,910 feet of the existing fence. This fence protects the treatment area from livestock traveling and invading Butte Creek in the lower portion of the riparian corridor. Both of these fences

implemented followed NRCS specifications and accounted for wildlife consideration by spacing the wire at least 16" from the ground and spaced at 16"-22"30"-42". This spacing allows for local wildlife to transverse under or over the fence while still effectively excluding livestock.

### **Changes from Proposed**

This project had a statement of work modification to alter the design set as one of the private landowners requested to be not proceed with the project due to concerns of flooding an access road while the property was listed for sale. Unfortunately through the course of the 1 year postponement of permitting issues, the modification was not relayed to the hired contractors and structures were implemented as originally planned. Wheeler SWCD staff contacted the landowner who had requested to not proceed to advise of the mistake. However, the landowner was actually ecstatic about the project's success and excited to see the restoration since the property did not sale.

### **Public Awareness or Education**

Project will be included in the in displays presented at the Wheeler SWCD's annual meeting, and at the Wheeler County Fair and Rodeo. In addition, the project overview is listed on the Wheeler SWCD website under projects: [WheelerSwcd.org](http://WheelerSwcd.org)

### **Lessons Learned**

The biggest lesson learned from this project is how to navigate through the federal programmatic process and ensure all permit obligations are being met before project work begins. With this project being one of the first projects going through a federal nexus and being requested to be transferred from one programmatic to another it was complicated to understand and follow how the process works. In addition, it is important to have contingency line items for projects that have to go through a federal programmatic as cultural resource survey can be a mandatory requirement and additional funds may be needed to cover the services of an archeologists to conduct a formal survey and reporting.

Another lesson learned is to keep adequate documentation of changes and partners involved who may need to be notified. Due to staffing turnover and little to no training for the staff who took over the project prior to implementation, it was difficult to understand all the changes that occurred.

### **Recommendations**

The only recommendation I would make it to ensure landowners have a full understanding of what the project and implementation will look like on there property. Implementation can be slightly messy and contractors can potentially have to make roads and use material to mark locations throughout the project area.

### **Aquatic Habitat**

Wheeler SWCD has read the Oregon Aquatic Habitat Restoration and Enhancement Guide and all project components are within compliance.

### Special Conditions

All Special Conditions are uploaded in the upload's sections.

### Funding Sources

Source	Identifier	Cash	InKind Type	Inkind
Confed Tribes Warm Springs (CTWS)		\$0.00	Materials	\$3,272.64
Landowner		\$0.00	Materials	\$700.00
Oregon Wildlife Heritage Foundation		\$4,095.00		\$0.00
OWEB	220-8208-19238	\$174,036.00		\$0.00
Think Wild		\$0.00	Labor	\$1,250.00
Think Wild		\$0.00	Volunteers	\$7,632.00
Think Wild		\$0.00	Materials	\$500.00
USDA-NRCS		\$10,113.00		\$0.00
USDA-NRCS	219-9001-16745	\$17,000.00		\$0.00
USDA-NRCS	219-9001-16745	\$0.00	Labor	\$1,740.24
Wheeler SWCD		\$0.00	Materials	\$2,357.46

### Totals

OWEB Amount	Non OWEB Cash	Inkind Total	Non OWEB Amount	OWEB Match	Total Project Cost
\$174,036.00	\$31,208.00	\$17,452.34	\$48,660.34	28.0%	\$222,696.34

\* This grant agreement has a special condition that alters the match funding requirement; to read the requirement see Exhibit B of the grant agreement.

## Uploaded Files

Image Type	File Name	Description
Photo Point	P5278622.JPG	Location of PALS to be installed.
Photo Point	PA181106.JPG	Overview of PAL structure.
Photo Point	P5278630.JPG	View of PAL location to be installed.
Photo Point	PA181098.JPG	View of PAL installed.
Photo Point	P5278634.JPG	PALS to be installed.
Photo Point	PA181112.JPG	PAL Installed.
Photo Point	P5278637.JPG	Overview of PALS location.
Photo Point	PA181138.JPG	View of PAL structure pushing water out towards the floodplain.
Photo Point	P5278644.JPG	Overview of channel straightening to be corrected with PAL placements.
Photo Point	PA181145.JPG	Overview of Butte Creek expanding out into floodplain from structure treatment.
Photo Point	P5278645.JPG	Proposed location of BDA structures to be installed.
Photo Point	PA181152.JPG	View of BDA structure installed across Butte Creek.
Photo Point	P5278654.JPG	Proposed BDA location to raise water level and provide habitat.
Photo Point	PA181169.JPG	Overview of BDA structure, raising water table and increasing floodplain connectivity.
Photo Point	P5278659.JPG	Proposed BDA location along Butte Creek.

Photo Point	PA181174.JPG	View of BDA structure along Butte Creek.
Photo Point	P5278664.JPG	Location of PALS to be installed in series.
Photo Point	PA181180.JPG	Showing PAL location.
Photo Point	P5278670.JPG	Location of BDAs to be installed to increase floodplain connectivity.
Photo Point	PA191188.JPG	Overview of BDA structure spreading water across floodplain.
Photo Point	P5278676.JPG	View of proposed BDA and PALS location.
Photo Point	PA191194.JPG	view of PAL structure by steep embankment to increase scouring and sediment recruitment.
Photo Point	P5278683.JPG	View of BDA/PALS and riparian plantings to be installed.
Photo Point	PA191212.JPG	Overview of BDA structure.
Photo Point	P5278690.JPG	Proposed BDA location to lift water level and connect floodplain.
Photo Point	PA191223.JPG	Close up of BDA structure along Butte Creek.
Photo Point	P5278697.JPG	View of proposed PALS location.
Photo Point	PA191229.JPG	View of PAL structure increasing floodplain connectivity
Photo Point	P5278714.JPG	View of creek channelized. BDAs to be installed to increase sinuosity.
Photo Point	P5051043.JPG	Overview of PAL structure increasing floodplain connectivity.

Photo Point	P5278720.JPG	Proposed BDA locations in the Butte Creek fan.
Photo Point	PA191241.JPG	View of BDA structure in the fan portion of Butte Creek.
Photo Point	P5278721.JPG	Close up of proposed BDA location.
Photo Point	PA191251.JPG	Close up of PAL structure.
Photo Point	DJI_0215.JPG	Aerial view of Butte Creek. BDAs to be installed on both channels.
Photo Point	DJI_0125.JPG	Aerial view of Butte Creek and BDA/PAL structures.
Photo Point	DJI_0230.JPG	Overview of BDAs to be installed.
Photo Point	DJI_0137.JPG	View of Butte Creek treated with BDA and PAL structures.
Photo Point	DJI_0247.JPG	Landscape view of Butte Creek fan. BDAs to be installed in main channel and side channel.
Photo Point	DJI_0130.JPG	View of the confluence, new fencing, and structure placement.
Photo Point	P9260911.JPG	View of PALS to be installed along Deep Creek.
Photo Point	PB200001.JPG	View of PAL structure along Deep Creek.
Photo Point	P9260915.JPG	Showing disconnected floodplains to be enhanced with BDAs.
Photo Point	P8090680.JPG	Overview of BDA structure on Deep Creek.
Photo Point	P9260918.JPG	Incised channel to be expanded through water holding capacity.

Photo Point	PB210022.JPG	Showing PAL location on Deep Creek.
Photo Point	P9260922.JPG	Landscape view of Deep Creek to be restored through instream restoration work.
Photo Point	PB210019.JPG	View of BDA structure creating pool and spreading water into the floodplain.
Map	Photo Point Map 2.pdf	Photo Point Map
Other	Butte_Creek_Completion_20230809_Final.pdf	As Built Report - Anabranch Solutions
Photo (other)	Butte Creek Riverscape Restoration Pre-Project Photos.pdf	Pre-Project Photos
Photo (other)	Butte Creek Riverscape Restoration Post-Project Photos.pdf	Post-Project Photos
Exhibit B	19238_Conditions.pdf	
Final Payment Checklist	Final Payment Check List 220-8208-19238_1.16.24.pdf	Final Payment Request Checklist