



Prospectus of Proposed Project Opportunity

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Opportunity Title

Wa'wáanma Bear Creek Restoration Project

Opportunity Lead

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Landowners

Philip and Denise Corcoran

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Lionel Sauvage

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Contacted: Yes

Supportive: Yes

Contribution: Allowing full floodplain restoration to occur. Grazing in the floodplain will cease. Wood can be sourced locally on the property.

River

Name: Bear Creek
Mile: 3.1-5.2
Tributary: Wallowa River

Restoration Atlas

BSR: WLL-2
Tier: Tier 1
Initial Score: 51.5
Proposed Score: 46.8

Restoration Activities

2. Channel Reconstruction
3. Pool Development
4. Riffle Construction
5. Meander (Oxbow) Re-connect - Reconstruction
7. Levee Modification: Removal, Setback, Breach
8. Remove - Relocate Floodplain Infrastructure
9. Restoration of Floodplain Topography and Vegetation
10. Floodplain Construction
11. Perennial Side Channel
12. Secondary (non-perennial) Channel
13. Floodplain Pond - Wetland
14. Alcove
15. Hyporheic Off-Channel Habitat (Groundwater)
16. Beaver Restoration Management
17. Riparian Fencing
18. Riparian Buffer Strip, Planting
19. Thinning or removal of understory
20. Remove non-native plants
22. Barrier or culvert replacement/removal
26. Boulder Placement
27. LWD Placement
28. Modification or Removal of Bank Armoring
31. Improve Thermal Refugia (spring reconnect, other)
34. Upland Vegetation Treatment - Management
36. Road Grading - Drainage Improvements

Species Affected

Focal: Snake River Spring Chinook Salmon, Snake River Summer Steelhead, Bull Trout
Other: Lamprey, Coho Salmon, Redband trout, Whitefish

Description

There is approximately 2.1 miles of Bear Creek on the Sauvage property, including adjacent floodplain as well as another 2 miles of Little Bear Creek. The focus area for this project proposal is located on the lower 2 miles of Bear Creek. Pre-European conditions for this reach were most likely incredibly dynamic and acted as a true wilderness river. For the last 50 years this property has been owned by a timber company that also leased it for grazing cattle during the summer months. The property has recently changed ownership, with the new landowner desiring to restore the landscape and allow public use year-round.

The creek in the lower portion of the property has been pushed against the road prism, is at bedrock in many areas, and is disconnected from its floodplain. Most of the potential floodplain restoration actions would occur on the lower 2 miles of the Sauvage property. Upstream it becomes more confined and steeper as it leaves the Sauvage property and moves onto the United States Forest Service (USFS) land that continues well past the wilderness boundary. There is one small withholding property in the middle of this 2 mile reach that may have some floodplain opportunities as well. In this location there is also a county owned bridge that is undersized and at risk of being overtopped in a 100 year event that could also wash out the road. In addition, there is another bridge crossing Bear Creek at the most downstream end of the project that is even more undersized, these may have forced the river to be more confined than probable historic conditions. Little Bear Creek's confluence with Bear Creek is located on the Sauvage property above the focus reach. This perennial tributary is steep with little floodplain, however there is overstocked understory in the riparian that could be utilized to benefit the system in areas that are less unconfined. There is evidence of heavy cattle grazing in the riparian zone and around the multiple springs on the property.

The creek is a very dynamic system that experiences a large flood pulse each spring as snow melts off the surrounding Wallowa Mountains, thus causing the creek to shift and take new paths across its floodplain.

There are several areas of Bear Creek that is disconnected from its floodplain, LiDAR has revealed evidence of multiple old channels and flow paths throughout the property. Bear creek is currently at bedrock in several places, especially the confined section that has been pushed against the road. Four large pools were found as defined by ($>20 \text{ m}^2$ area and $> 0.80\text{m}$ max depth) in the project reach. Historic frequencies may have been closer to 16 per km (McIntosh et al. 2000). Riparian vegetation has been suppressed by overgrazing but will most likely thrive once protected. There are several native species in the riparian zone including cottonwood, alder, willow, river birch, and spruce. Conifers such as pine, lodgepole, Douglas fir, and others have inhabited areas that are currently disconnected from the floodplain and are taking advantage of dryer conditions. There is relatively low recruitment of cottonwood and river birch, with only the mature age class remaining for the most part. Juniper trees are encroaching in some of the meadow and spring areas. Downstream from this reach there are several irrigation

withdrawals which tend to produce incredibly low flows in Bear Creek during the summer months.

Little restoration work has been implemented on Bear Creek despite it being ranked a Tier 1 subbasin or of the highest priority for restoration according to the Wallowa Atlas Restoration Prioritization Process (Atlas) developed by BPA. The prioritization method of Atlas has been implemented in several basins within the Columbia Basin acting as a well-organized and science-based way of prioritizing restoration with the goal of increasing population abundance of Endangered Species Act (ESA) listed salmonids found in these watersheds. This is technical and collaborative tool that used local and regional knowledge to combine essential information such as limiting habitat factors, fish utilization by species and life stage, channel geomorphology, and other factors, to strategically identify and prioritize targeted restoration actions and locations to improve aquatic habitat for Snake River spring/summer Chinook Salmon, Snake River summer steelhead, Pacific Lamprey, and Bull Trout. This project compliments other projects within the Wallowa Valley that have occurred on the Wallowa and Lostine Rivers by focusing on habitat for focal species.

There are several Limiting Habitat Factors in Bear Creek according to The ESA Recovery Plan for North East Oregon Snake River Spring and Summer Chinook Salmon and Snake River Basin Steelhead Populations (NOAA 2017). 1) Reduced stream complexity and channel structure, 2) Elevated summer water temperatures, 3) Diminished streamflow during critical periods, 4) Reduced floodplain connectivity and function, and 5) Degraded riparian conditions. Considering these limiting factors, it was determined through Atlas that several restoration actions could benefit the system including; Channel Reconstruction, Pool Development, Riffle Construction, Levee Modification, Restoration of Floodplain Topography and Vegetation, Perennial and Secondary Side Channel Creation/Reactivation, Floodplain Wetland Enhancement, Riparian Planting, Riparian Fencing, Improve Thermal Refugia, LWD Placement, Road/Culvert Drainage Improvements. These actions will improve adult migration, spawning, incubation/emergence, and summer and winter rearing for Chinook salmon, steelhead, Bull Trout, and Pacific Lamprey within the project reach. It is anticipated that recently reintroduced Coho salmon will also benefit from these restoration actions.

Objectives

This project is focused on improving the limiting habitat factors that are critical to multiple life stages of ESA listed spring Chinook salmon, summer steelhead, and bull trout as well as redband trout, lamprey, and other native fish species. The primary goal is to enhance aquatic habitat diversity through the restoration of natural river function and processes, including floodplain connectivity, to create and maintain a complex riverine corridor.

Site-specific project objectives are to:

☒ Increase the quantity and complexity of high-quality habitat by utilizing

the placement of instream wood to improve hydraulic diversity, increase pool quantity and quality, improve sediment sorting, and increase cover.

☒ Distribute stream flow and energy through a range of hydrologic conditions by increasing water surface elevations to reconnect or create seasonally active secondary channels.

☒ Increase seasonal floodplain connection and function to dissipate flood energy and improve flood water storage, hyporheic exchange, sediment storage, and in-channel sediment sorting.

☒ Where possible, maintain and enhance existing spring channels and create habitat features that can be utilized by beaver to expand their habitat and influence within the riverine corridor.

☒ Protect, establish, and maintain a robust native riparian plant community along channel banks and floodplain, thus increasing shade and improving bank structure and habitat.

☒ Protect and/or modify existing infrastructure to maximize fish habitat uplift throughout the project area.

Major Risks

The most relevant barrier to implementing this project will be securing funding, the primary landowner is onboard with full floodplain restoration of the project. Another potential problem is located at the middle of the project where the undersized county bridge is, and new bridge is being designed. The landowner with the small in-holding parcel is not against the restoration work but wants to keep his property intact and is currently trying to sell it. This area and new bridge construction will be separated into a phase 2 to allow the bridge design to be complete and hopefully the inholding parcel will be bought from the landowner who owns the surrounding parcel.

Permits and Consultation

ESA Section 7 USFWS: Applicable
ESA Section 7 NMFS: Applicable
COE or DSL Permit: Applicable
Cultural Resources Section 106: Applicable
DEQ 401 Water Quality Permit: Applicable

Project Schedule

Year: 2026

Monitoring: ODFW will provide photopoint monitoring for riparian vegetation response and structure functionality. ODFW will also conduct site visits throughout various times of the year to monitor overall function of the project and adaptively manage as needed.

GRMW will provide Drone Imagery for surface water connectivity and project function.
ODFW/NPT will continue to conduct chinook spawning ground surveys.

Project Relations

Multi-phase Effort: Yes

Phase Description: Phase 1 will occur from RM 3.1 - 4.2 and 4.4 to 5.2 this phase will have the most focus on floodplain restoration and installing large wood structures via heavy equipment and helicopter. Phase 2 will occur from RM 4.2 to 4.4 and will mostly consist of constructing a new bridge across the county road, channel design through the passageways, and will not use a helicopter.

Could Phase 1 be a Stand Alone Project: True

Would the project lose value if future phases don't happen: The restoration value will still remain high with the phased approach as the majority of the uplift will occur in phase 1. Phase 2 will still be essential to ensure the county road and bridge are not at risk from a 100-year flood event and this area will be able to still have a multibraided channel network instead of an incised straight shot affecting downstream conditions.

Preliminary Cost Estimate

Total: 2,000,000

BPA Funding: 2,000,000

OWEB Funding: 0

Design Funding

Design Funds Requested: No