Prospectus of Proposed Project Opportunity

Submitted Jan 02, 2025

Opportunity Title

Chesnimnus Creek RM11 Restoration Project

Opportunity Lead

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Technical Contact

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Landowners

Contacted: Yes
Supportive: Yes. The US Forest Service is supportive of the project, and is an active member of the project team.
Contribution: Staff from the Wallowa Whitman National Forest, Wallowa Valley Ranger District are reviewing project designs at each design stage, and participating in associated meetings. The USFS will also provide permitting assistance and ensure that project activities comply with NEPA.

River

Name: Chesnimnus Creek
Mile: RM11 - RM16.6
Tributary: Joseph Creek, Grande Ronde River

Restoration Atlas

BSR: MCC-1
Tier: Tier 2
Initial Score: 52
Proposed Score: 52

Restoration Activities

2. Channel Reconstruction
3. Pool Development
4. Riffle Construction
5. Meander (Oxbow) Re-connect - Reconstruction
7. Levee Modification: Removal, Setback, Breach
9. Restoration of Floodplain Topography and Vegetation
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
26. Boulder Placement
27. LWD Placement

Species Affected

Focal: Snake River Summer Steelhead, Pacific Lamprey
Other: Redband trout, North American beaver, numerous other aquatic and terrestrial species

Description

The Chesnimnus Creek Restoration Project is located within an ATLAS Tier II BSR and spans 6.6 miles of Chesnimnus Creek, a major tributary of Joseph Creek. This area is recognized as a significant stronghold for Snake River Summer Steelhead within the Grande Ronde Basin, with considerable potential for habitat improvements. A 2024 spawning survey identified 20 steelhead redds within the project reach, highlighting the area’s importance for steelhead locally. Located on the Wallowa-Whitman National Forest, the project is positioned upstream of a large restoration effort on private lands led by the Nez Perce Tribe. Together, these efforts will restore a substantial corridor of high-functioning habitat across public and private lands.

The stream has been significantly altered by historic land use practices, including levee construction, road-building, timber harvest, and wood

removal. These activities have straightened and simplified the creek's channel, disconnected it from its historic floodplain, side channels and wetlands. As a result, many areas now lack pools, large woody debris (LWD), spawning-sized gravels, and channel complexity. Additionally, historic and ongoing livestock grazing has led to a reduction in riparian vegetation in several areas. Despite these impacts, some reaches of the creek retain better habitat conditions, including areas with natural processes such as large LWD jams that are causing scour, sediment sorting/bar formation and floodplain activation during high flows. Active beaver dam complexes are also present, creating quality pool habitat and driving channel dynamism.

Several restoration efforts have been implemented in the past:
- In the 1990s, the USFS installed sill logs, which were later removed in the mid-2000s.
- A 2008 project introduced LWD jams, improving channel complexity in some localized areas.
- Multiple cattle exclusion fences were installed throughout the project area. Vegetation recovery is encouraging within these enclosures, though many sections are now in disrepair and allow cattle access.
- Non-native willow trees were planted for bank stabilization, but these trees have now become problematic, acting as bank armoring and crowding out native vegetation.

Chesnimnus Creek offers significant opportunities for restoring channel complexity, reconnecting floodplain and off-channel habitats, increasing pool habitat, and enhancing ecological function for native species. While the stream is productive steelhead habitat relative to others in the basin, many reaches have poor spawning and rearing conditions, presenting high potential for restoration. Beavers are active in the stream and will benefit from increased habitat complexity and a healthier riparian ecosystem. Existing beaver dams are currently concentrated where there is already significant channel complexity and LWD, suggesting that they may expand into new areas if given cover and sufficient protection from high flows.

Project Goals:
- Enhance natural riverine and floodplain processes, such as sediment sorting, LWD accumulation, floodplain activation, riparian vegetation growth, and beaver activity.
- Improve habitat quality and quantity for juvenile and adult steelhead, redband trout, Pacific Lamprey, and other native species during primary use periods.
- Restore riparian habitat and ecological function for all native species in the stream corridor.

The project team is currently developing a restoration design (15% complete) that combines various treatments to achieve the project goals. Proposed treatments include:
1. Placement of large woody debris (LWD) structures throughout the project reach.
2. Removal of an earthen levee in the upper project area to restore natural channel processes.
3. Selective channel fill and riffle construction to enhance habitat

complexity.
4. Reconnection and excavation of side channels to restore floodplain connection.
5. Repair and expansion of cattle exclusion fences.
6. Selective removal of bank-armoring willows and conifers to allow for dynamic channel formation and enable the growth of native riparian vegetation.

The project area is divided into 5 distinct reaches divided into two groups based on the types of treatments proposed. Reaches with high process rates (e.g., seasonal high flows, sediment movement, beaver activity) and a relatively accessible floodplain will receive a lighter-touch approach, using LWD placement to increase complexity and encourage natural channel dynamics. In more altered or incised areas (e.g., levees, the decommissioned campground), more intensive earthmoving treatments will be necessary, along with extensive LWD placement. Levees in the upper project area will be removed, with notches cut at the entrances to side channels to improve floodplain connection. Cut materials will be used in the main channel to reverse incision and improve spawning habitat, which is currently simplified and dominated by large cobbles. At the decommissioned Vigne Campground, the project team will partially excavate side channels and use selective grading to restore natural floodplain topography. Material from these excavations will be placed selectively in the main channel to enhance habitat conditions and increase floodplain inundation.

The riparian areas of Chesnimnus Creek have some relatively robust hardwood communities, supporting several active beaver dam complexes. However, livestock grazing, competition with non-native willows, and conifer encroachment have limited the establishment of native hardwoods in many areas. To address these issues, the project team will repair cattle exclusion fences and expand them where needed. The project team is currently coordinating with Forest Service staff to identify fence alterations and explore the possibility of altering the grazing plan to protect recovering shrubs. The project team is planning to selectively remove the non-native willows to encourage channel dynamism and improve growing conditions for native hardwoods. While full eradication may not be feasible, reducing their numbers should help native cottonwoods, willows, and alders that are currently shaded out. We are exploring ways to use removed willows as large woody debris while preventing their spread to new areas. While existing vegetation should support natural recovery in most areas, some planting may be necessary in disturbed locations to jumpstart recovery.

Objectives

** The project team plans to fine-tune the project objectives into SMART objectives as the design process develops.

Goal 1: Improve natural riverine and floodplain processes (sediment sorting, LWD accumulation, floodplain activation, riparian vegetation growth, beaver activity, others)
Objectives:

- Increase frequency and duration of hydrologic floodplain connectivity.
- Increase native riparian species extent.
- Reduce invasive species extent.
- Increase extent of floodplain wetland habitats.
- Increase hydraulic complexity (depths and velocities) to encourage sediment sorting.

Goal 2: Improve habitat quality and quantity for juvenile and adult steelhead/redband trout, Pacific Lamprey, and other native species during primary use periods.
Objectives:
- Increase large pool frequency and depth, including pools with habitat complexity and overhead cover.
- Increase large wood density consistent with reference conditions from reference reaches.
- Increase habitat unit frequency and diversity.
- Increase quality and quantity of frequently connected floodplain habitats that are accessible to fish.

Goal 3: Improve riparian habitat and ecological function for all species of native flora and fauna in this stream corridor.
Objectives:
- Increase the extent and vigor of native hardwood communities (cottonwood, willow spp., alder, etc.).
- Decrease the extent and density of planted non-native willows.

Major Risks

This project will have a relatively low risk to infrastructure. The primary access road (FS 4625) is located well above the floodplain and will not be impacted by the project. The FS 4625140 road crosses Chesnimnus Creek roughly midway through the project area. This road crossing is a high clearance bridge and at a low risk for damage, but care will be taken to prevent excess wood mobilization above the bridge. The primary risk consideration is the threat of damage to fence crossings by mobilized LWD, which would increase the maintenance needs of the project. The project team will mitigate for this risk by building large LWD jams above fence crossings to catch wood before they reach fence crossings. These debris jams will be secured by partially burying key logs in the streambed. Additional risks include wood movement downstream onto private lands that may impact fence crossings or other infrastructure.

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: 2027

Monitoring: RIO captured pre-project drone imagery of the project area during their site surveys in fall 2024. The project team will coordinate with GRMW for post-project drone monitoring. Ground-based photo points and regular field visits will be used to document the evolution of the project. Forest Service staff have conducted spawning surveys in the project reach with basin partners. Spawning surveys will continue after completion.

Project Relations

Multi-phase Effort: Yes
Phase Description: Due to the length of the project reach (6.6 miles), it will likely need to be constructed in two or more phases. The project team is still working to solidify the specifics of each phase, but we plant to have a clear decision once the design is closer to completion. Two potential options for phasing are: A) Phase 1: Complete all light touch (LWD) reaches (1,3,5) Phase 2: Complete all heavier handed (earthmoving, channel fill, levee removal) reaches (2,4) B) Phase 1: Complete downstream half of project area (RM 11-14) Phase 2: Complete upstream half of project area (RM 14-16.6)
Could Phase 1 be a Stand Alone Project: True
Would the project lose value if future phases don’t happen: In either option described above, the restoration value of phase 1 will not be affected by the loss of phase 2.

Preliminary Cost Estimate

Total: $750,000-$1,200,000
BPA Funding:
OWEB Funding:

Design Funding

Design Funds Requested: No