Prospectus of Proposed Project Opportunity

Submitted May 08, 2024

Opportunity Title

Ronde River Ranch Fish Habitat Enhancement Project

Opportunity Lead

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Technical Contact

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Landowners

Angie and Jay Sykes & Family
Address: Ronde River Ranch LLC. 55959 HWY 244 La Grande, OR 97850
Phone: 208-921-6505

USA, Wallowa-Whitman National Forest
Address: Attn: Aric Johnson, District Ranger
Phone: 541-962-8500
Email: aric.johnson@usda.gov

Contacted: Yes
Supportive: Yes
Contribution: Access & Opportunity

River

Name: Grande Ronde River
Mile: 143.5-144.5
Tributary: Snake River

Restoration Atlas

BSR: UGR11
Tier: Tier 2
Initial Score: 85
Proposed Score:

Restoration Activities

1. Protect Land and Water (Easement, Acquisition, Management)
2. Channel Reconstruction
3. Pool Development
4. Riffle Construction
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
20. Remove non-native plants
22. Barrier or culvert replacement/removal
26. Boulder Placement
27. LWD Placement
29. Restore banklines with LWD - Bioengineering
31. Improve Thermal Refugia (spring reconnect, other)
33. Reduce - Mitigate Point Source Impacts

Species Affected

Focal: Snake River Spring/Summer Chinook Snake River Summer Steelhead
Other: Bull Trout, Pacific Lamprey

Description

The Ronde River Ranch Fish Habitat Enhancement Project is in Union County approximately 15 miles west of La Grande, Oregon. The project area is in the Upper Grande Ronde Subbasin, on the Grande Ronde River

between river miles 143.5 and 144.5 and a small segment of tributary streams Jordan Creek, which joins the Grande Ronde at the downstream extent of the project area, and Bear and Moss Creeks that both flow north from Highway 244 and join the Grande Ronde around the middle of the reach. The Project reach sits at an elevation of approximately 3,100 feet with a contributing watershed area of 475 mi2, which is predominantly snowmelt-driven. Most of the basin is forested (over 73 percent) and has very little development (less than 0.1 percent estimated impervious area) (USGS 2014). The Project reach sits between previous fish habitat enhancement projects Bird Track Springs (BTS) and Longley Meadows and includes Wallowa-Whitman National Forest and private lands along State Highway 244 within the Grande Ronde recovery plan assessment units UGC3A and UGS16. The Upper Grande Ronde River Tributary Assessment (Appendix A; Reclamation 2014) identifies the Project reach as an unconfined geomorphic reach with a high potential to improve the overall physical and ecological processes that support salmonids in the basin, as well as potential to link together prior large-scale restoration efforts within the reach.

Existing Conditions

The project site consists of a broad unconfined floodplain that has been disconnected due to legacy anthropogenic disturbances including splash damming, historic railroad, road construction, channelization, and livestock overutilization. Conditions include a largely confined, mainstem Grande Ronde River that is over-widened, partially entrenched, and lacks diversity and complexity, and a tributary, Jordan Creek, that is incised and disconnected from its floodplain, lacking in riparian vegetation and in-stream wood material, and goes dry in late summer. The reach has experienced significant loss of historic large pool habitat and large wood, embedded and over-coarsened streambed lacking diversity, lack of sinuosity, and poor floodplain connectivity. Sediment, water temperature, low stream flows and decreasing water table, channel morphology (downcutting), large wood (habitat quality and quantity), and riparian habitat management are the most critical limiting factors for these salmonid populations.

Channel degradation has occurred in response to floodplain constriction from constructed levees and railroads, as well as historical log transport operations by splash damming through the project reach. The most prevalent historical feature limiting floodplain engagement and habitat development are remnants of the Mount Emily Logging Company railroad grade. The grade has been breached and removed in several locations but acts as a barrier to natural floodplain inundation within the reach. Railroad grades, road grades, and levees bisecting the floodplain create artificial channel constrictions and disconnected floodplains that have resulted in an enlarged and incised channel. Constriction concentrates flow velocities and shear stresses during high water events, resulting in a wider, more uniform plane-bed channel. Historical splash dam and log transport through the project reach also led to degraded channel conditions. The quantity and force of logs moving along the channel contributed to coarsened stream beds and severely truncated pool-riffle sequences.

Near the upstream most end of the reach is the site of a recent main channel avulsion where the erosive forces from several peak flow events carved out a straightened channel alignment that is actively downcutting through historic floodplain. Between 1999 and 2001 the USFS, ODFW, and NRCS placed rock barbs, cross vanes, and large wood in the first attempt to restore the Grande Ronde River within this reach from BTS through Longley Meadows. In 2000 the CTUIR removed some sections of railroad grade and push-up berm at the eventual avulsion location. In winter 2011 a major ice flow event scoured a pilot channel, breaching a log revetment at the site of the removed push-up berm. For nearly a decade this small side channel provided valuable, although limited, cold-water refuge for juvenile salmonids due to the elevated water table within the surrounding floodplain that supplied robust groundwater spring connections to late season surface flows. In 2020 two successive 25- and 50-year flood events unraveled (avulsed) the pilot channel into what is currently the new alignment of the entire main channel Grande Ronde River. A down-cutting trend of decreasing channel bed elevation has been observed after erosive seasonal high flows for each of the last four years since channel avulsion occurred. During this time the widening and down-cutting extent of the new channel alignment has expanded downstream approximately 700 feet from the initial avulsion location, as well as migrating upstream into the lower BTS project reach.

Moss Creek is an ephemeral, spring-fed tributary that enters the Ranch at the Highway 244 boundary near the neighboring Jordan Creek Ranch boundary and joins the Grande Ronde upstream of the Bear Creek confluence. Existing cattle operation infrastructure in and around Moss Creek include two hay barns, calving pasture, and nursery pasture. The hay barns sit at an elevation that is occasionally inundated during high flows. Landowner has made improvements within the historic floodplain and wish to protect them. Features include road/embankment, and hay barn and pad, and cow-calf chute fencing. Landowner values winter access to unfrozen spring water upwelling along Moss Creek when all other water sources are frozen but is concerned with unrestricted livestock access to the entire creek due to bank deterioration and during high flows when young calves are susceptible to drowning. There are two undersized culverts on Moss Creek that provide vehicle/tractor access to the hay barns.

Existing riparian vegetation conditions include limited upland vegetation with sparse riparian trees, shrubs, and wetland vegetation, but when present is generally confined to streambanks and historic channel swales. Beaver populations have been observed in neighboring habitat restoration project areas but are uncommon in the Ranch reach and play a limited role in forming and maintaining diverse habitat.

Large wood and debris play a significant role in habitat complexity, pool development, cover, floodplain roughness, contribution of detritus and nutrients, and macroinvertebrate production and are notably sparse in the existing condition, particularly large legacy wood.

Objectives

The long-term rehabilitation vision (CTUIR's River Vision) for the Bird Track Springs Fish Habitat Enhancement Project is to improve physical and ecological processes by rehabilitating and restoring the project area to achieve immediate and long-term benefits to Chinook, steelhead, and bull trout at all life stages.

Restoration actions proposed under this project supports the overall Fisheries Habitat Program goal to protect, enhance, and restore functional floodplain, channel, and watershed processes to provide sustainable and healthy habitat for aquatic First Food species.

River Vision touchstones (limiting factors) to be addressed by restoration goals and objectives include:

Water Quality and Quantity

Improve summer and winter altered thermal regime, increase diurnal buffering, decrease daily maximum temperatures, improve access to cold water spring sources. Improve summer base flow discharge and diversify water velocities.
• Decrease hours/days that stream temperatures exceed lethal limit (25°C).
• Increase hours/days within core cold temperature range for salmonids (10°C – 15.6°C).

Channel Morphology, Sediment, Instream Habitat Structure and Complexity

Enhance main channel, side channel, and off channel habitat by reconnecting or constructing perennial side channels, secondary channels, high-flow channels, floodplain ponds, wetlands, alcoves, and groundwater-fed off-channel habitat.
• Increase lengths and sinuosity of main and side channels.
• Increase the number of quality large pools (depth, frequency at approximately 8-12 pools per mile).
• Maintain side-channel and peripheral habitat persistence.

Increase stream length and channel complexity, increase channel bed elevation relative to top of bank or geomorphic grade line, and promote low energy anastomosing channel planform.
• Increased River Complexity Index over pre-project conditions.
• Decreased channel entrenchment.

Promote diverse geomorphic processes, features, and patterns of sediment movement, sorting and deposition in stream channels and floodplain.
• Increase sediment storage, channel migration/avulsion, and diversity/ frequency of geomorphic features within 5 years after project completion.
• Increase substrate size class diversity in wetted channels within 2 years of project completion.

Increase habitat diversity and number and frequency of large wood in project reach, add lateral and vertical complexity to channel planform and bed morphology to increase hyporheic exchange.

• Increase wood loading (14 pieces per 100 meters) commensurate with reference condition wood loading, or as floodplain roughness element while vegetation becomes established.

Floodplain reconnection

Restore lateral, vertical, longitudinal connectivity to promote hydrologic and geomorphic processes that maintain complex and resilient habitats that hydrate/store, attenuate floods, and buffer water temperature.
• Increase annual inundation to the approximately 96 acres of historic river-wetland floodplain corridor.
• Increase groundwater elevation relative to meadow surface.
• Increase summer base flow discharge.
• Increase acre-foot water storage in floodplain.
• Increase acres of suitable beaver habitat.

Habitat Protection and Riparian Management

Re-invigorate self-sustaining native riparian and floodplain/wetland plant communities, diverse species composition, support beaver recolonization, support soil stability in bare or disturbed areas, increase hydraulic roughness in areas susceptible to erosion through riparian easement (livestock exclusion).
• Increase riparian-wetland acres protected with livestock exclusion fencing.

Fish Passage

Improve and maintain fish passage for all life stages of targeted species (steelhead, Chinook salmon, bull trout, and Pacific lamprey).
• Increased miles of restored or improved passage for targeted species.
• No net increase in passage barriers (jump height, velocity, etc.)

Specific restoration actions may include:

• Filling existing incised channels or constructing riffles to raise water surface elevation to reconnect with the floodplain. Arrest actively degrading main channel at site of 2020 avulsion. Halt downcutting, head-cutting and erosion.
• Connecting pilot channels to existing historic channel scroll networks.
• Creating new multi-threaded channel network to decrease stream power and erosive forces. Return river alignment to braided low velocity multi-channel planform.
• Splitting flow, when possible, to create islands and dissipate high flow energy from confined channel reaches.
• Breach or remove anthropogenic berms and levees in select locations to increase river connectivity with the floodplain. Decrease elevation of adjacent floodplain.
• Installing large woody debris structures to force pools, sort sediment, and increase complexity. Increase LWD pieces per stream mile. Increase occurrence of large pools per stream mile.
• Installing significant floodplain roughness to discourage avulsion potential and allow for process-based channel recovery.

• Robust riparian planting effort and floodplain grading to promote cottonwood recovery.
• Promote natural recolonization through improved site hydrology and increase moist soil condition.
• Utilize low-tech restoration techniques to raise water surface and increase floodplain connectivity within tributaries.
• Re-grade tributary confluences with main channel to increase usable area of cold groundwater-influenced thermal refuge habitat.
• Construct riparian protection fencing and improve water gap access with hardened crossings to maintain livestock operations while limiting streambank erosion.
• Improve undersized culvert crossing.
• Protect existing ranch operations infrastructure and resources.

Major Risks

Major barriers to implementation could result from delays in environmental compliance and cultural resources findings.

The majority of proposed restoration elements are anticipated to occur within the privately owned ranch portion of the overall potential project area between upstream Bird Track Springs and downstream Longley Meadows Habitat Enhancement Projects. Large-scale restoration project planning, design, and permitting and construction timelines have the potential to progress at a rate that may conflict with timing of ranch operation goals and objectives.

Ranch operation infrastructure consisting of two hay barns, access roads, fences, and irrigation wheel line exist in the vicinity of proposed restoration elements.

Bureau of Reclamation's Public Safety Risk Rating, Property Damage Risk Rating.
Large Woody Material – Risk Based Design Guidelines.

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: Ongoing physical and biological monitoring efforts within the adjacent restoration projects BTS and Longley Meadows are anticipated to expand throughout this opportunity project reach, and may include

steelhead and Chinook spawning surveys, juvenile snorkel surveys, stream temperature, aerial orthomosaic and LiDAR imagery, stream channel cross-sections, longitudinal profile, and substrate monitoring.

Project Relations

Multi-phase Effort: Yes
Phase Description: The scope of this proposed project may require a multi-phased implementation strategy spanning two construction windows 2026-2027
Could Phase 1 be a Stand Alone Project: True
Would the project lose value if future phases don’t happen: Aligning restoration goals, objectives, and implementation timeline with those of the landowners will increase value and opportunities for this potential restoration project.

Preliminary Cost Estimate

Total:
BPA Funding:
OWEB Funding:

Design Funding

Design Funds Requested: No