



Prospectus of Proposed Project Opportunity

Submitted Dec 09, 2024

Opportunity Title

Lookingglass Creek Bridge Planning and Construction

Opportunity Lead

Deric Carson
Organization: CTUIR
Phone: 541-969-8253
Email: dericcarson@ctuir.org

Technical Contact

Deric Carson
Organization: CTUIR
Phone: 541-969-8253
Email: dericcarson@ctuir.org

Landowners

Contacted: Yes
Supportive: Yes.
Contribution: The project area falls within property solely owned by the CTUIR

River

Name: Lookingglass Creek
Mile: 4.5-6.5
Tributary: Grande Ronde River

Restoration Atlas

BSR: UGR1
Tier: Tier 3
Initial Score:
Proposed Score: tbd

Restoration Activities

2. Channel Reconstruction
3. Pool Development
4. Riffle Construction
8. Remove - Relocate Floodplain Infrastructure
9. Restoration of Floodplain Topography and Vegetation
10. Floodplain Construction
11. Perennial Side Channel
12. Secondary (non-perennial) Channel
15. Hyporheic Off-Channel Habitat (Groundwater)
16. Beaver Restoration Management
21. Dam removal or breaching
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)
34. Upland Vegetation Treatment - Management
35. Road Decommissioning or abandonment

Species Affected

Focal: Snake River Spring Chinook, Snake River Summer Steelhead, Bulltrout, Resident Rainbow Trout. LA
Other: Pacific Lamprey, Mountain Whitefish, Dace, Sucker, Northern Pikeminnow, Sculpine.

Description

Lookingglass Creek through the project area is impacted by historic anthropogenic alterations like, channelization, floodplain leveling, floodplain infrastructure, pond construction, grazing, logging, and road construction. As a result, the existing creek is a high gradient, channelized, single thread system with coarse sediment, and lack of floodplain connection. The long-term vision (CTUIR's River Vision) for the Project is restored hydrologic and geomorphic processes and function. The primary objectives of the Project include: floodplain reconnection, restoration of channel morphology, enhanced instream habitat structure and complexity, restoration of diverse and resilient native riparian and wetland plant communities. Project actions are designed to target the five CTUIR River Vision Touchstones:
Ø Connectivity: Lateral floodplain connectivity will be increased via a network of flowpaths. Vertical connectivity via hyporheic flowpaths will benefit from deposition of mobile gravels that form dynamic bars and

increased planform complexity and elevated water tables throughout the floodplain.

Ø Geomorphology: Reduced unit stream power will increase the retention of incoming sediment and organics. Natural sediment sorting and deposition will encourage channel migration and dynamism.

Ø Hydrology and Water Quality: Elevated groundwater tables and increased hyporheic connectivity will increase temperature diversity, lower overall temperatures via increased riparian growth, and increase natural water quality treatment and metabolism in the subsurface.

Ø Riparian Condition: Reestablished channel dynamism (bar formation and channel migration) will increase suitable surfaces for recruitment of willows and cottonwoods. Elevated water tables will give cottonwood and willow an advantage. Increased beaver activity will increase vegetation diversity.

Ø Aquatic Biota: Increased spawning area via increased gravel deposition and retention. Increased primary productivity with retention of organic material. Increased cover and habitat complexity from a naturally dynamic channel with abundant wood and wood recruitment.

The lower .9 miles of Lookingglass Creek in the project area is greatly incised and channelized to the toe of the southern valley slope. Restoration actions in the reach aim to fill the existing channel and re-engage Lookingglass with its floodplain. Currently, channel fill actions are planned to extend downstream of uppermost bridge in the project area. If the bridge were to not be relocated, cut fill actions would be reduced downstream and approximately 30 floodplain acres would remain inactive. Relocating the bridge will allow the habitat planning and construction to meet project goals and objectives, while maximizing the ecological uplift in the reach.

Objectives

- Increase floodplain connectivity and frequency of inundation to a condition closer to historical and natural form. Re-engagement of the floodplain will result in flows that are less confined, decreased stream power, increased and more variable gravel deposition, elevated groundwater tables, increased base flows, and decreased water temperatures. Hyporheic flow and native riparian species will thrive.
- Increase channel complexity with channel morphology (channel form, sinuosity, complexity, geomorphic and hydrograph stability) closer to historical and functional form especially wood, pools, and a diversity of bed material sizes.
- Increase stream velocity diversity at both low and high flows.
- Increase quantity and quality of habitat diversity, especially large wood and pools.
- Increase rearing habitat in the floodplain.
- Reestablish geomorphically appropriate sediment sorting and routing.
- Improve and reestablish in-stream thermal diversity throughout the year.
- Improve quality and diversity of in-stream and off-channel habitat for resident and anadromous fish in Lookingglass Creek by increasing locations suitable for adult spawning and increasing area available for juvenile rearing.
- Restore natural channel forming processes through the addition of large

wood to increase channel complexity, and restoration of sediment routing processes through the removal of levees and other floodplain impediments.

- Reestablish native floodplain plant communities and riparian function with site-appropriate native vegetation and off-channel habitat. Realistic, cost-effective planting plans will maximize plant survival and minimize labor and maintenance; the planting plan will reflect CTUIR First Food values.

Major Risks

The project area is located within core spawning and rearing habitat for ESA listed Chinook, Steelhead, and Bulltrout . Implementation action could potentially impact spawning chinook within the project area. Additionally, the Lookingglass Fish Hatchery is located approximately 3 miles downstream of the proposed restoration actions. Best management practices will be implemented to manage any excessive turbidity and water quality related issues that could impact hatchery operations.

Permits and Consultation

ESA Section 7 USFWS:

ESA Section 7 NMFS:

COE or DSL Permit: Applicable

Cultural Resources Section 106: Applicable

DEQ 401 Water Quality Permit: Applicable

Project Schedule

Year: 2025

Monitoring: Extensive monitoring has been ongoing through the CTUIR Grande Ronde RM&E and Biomonitoring Programs. Monitoring will continue post bridge and habitat construction.

Project Relations

Multi-phase Effort: Yes

Phase Description: The project will consist of two phases. The first phase consisting of relocation/construction of the new bridge lower down in the valley, at the transition out of the unconfined valley. The second phase will be implementation of the habitat design and removal of floodplain structures.

Could Phase 1 be a Stand Alone Project: False

Would the project lose value if future phases don't happen: In the lower reach of the project area, Lookingglass Creek is confined to the valley slope and extremely incised. If the bridge is not relocated out of the floodplain, project objectives will not be fulfilled. The .75 reach upstream of the new bridge location is planned to be a stage 0 approach. Keeping the bridge in its current location would drastically decrease the scope of the habitat work by approximately 30 acres. The habitat phase of the

project will not achieve the maximum ecological uplift without the structure being moved out of the floodplain.

Preliminary Cost Estimate

Total: \$800,000

BPA Funding: \$800,000

OWEB Funding: 0.00

Design Funding

Design Funds Requested: No