Prospectus of Proposed Project Opportunity

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Opportunity Title

Aiwohi-Sisco Dry Creek Stream Restoration

Opportunity Lead

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Technical Contact

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Landowners

Contacted: Yes
Supportive: The landowner is very supportive of the project. The landowner has signed a Landowner Cooperative Agreement that allows the district to conduct the work related to the design and implementation of the restoration project as well as protects the project from grazing for 15 years after project completion.
Contribution: The Landowner will participate in the design phase by providing review and input. In addition, the landowner has agreed to establish a conservation easement protecting the riparian area and active floodplain, and replace an existing stream ford with a small foot bridge. The landowner has agreed to design and build the foot bridge structure.

River

Name: Dry Creek
Mile: RM0.58-RM0.79
Tributary: Willow Creek

Restoration Atlas

BSR: UGR4
Tier: Tier 3
Initial Score:
Proposed Score:

Restoration Activities

1. Protect Land and Water (Easement, Acquisition, Management)
2. Channel Reconstruction
3. Pool Development
5. Meander (Oxbow) Re-connect - Reconstruction
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
27. LWD Placement
28. Modification or Removal of Bank Armoring
29. Restore banklines with LWD - Bioengineering
31. Improve Thermal Refugia (spring reconnect, other)
34. Upland Vegetation Treatment - Management

Species Affected

Focal: Snake River summer steelhead
Other: Snake River spring Chinook

Description

The Willow Creek Watershed provides significant habitat for federally listed Snake River summer steelhead, potential spawning and rearing habitat for spring Chinook salmon, and supports a variety of native resident fish species. Past land use has significantly impacted the system’s ability to produce and maintain viable populations of steelhead. Farming, irrigation, channelization, removal of riparian and wetland vegetation, and livestock overutilization have decreased floodplain connectivity, de-stabilized stream

channels, and decreased riparian and wetland habitat. Straightened reaches of the stream channel have incised leading to bank erosion, high sediment loading and simplification of aquatic habitat.
Limiting factors were documented for the basin in the Willow Creek Watershed Analysis (GRMW 2001). Key limiting factors include large wood deficiencies, lack of shade, high summer water temperatures, elevated sediment and nutrient inputs, loss of wetlands, stream channelization and stream flow depletion. Additional field surveys conducted throughout the Willow Creek Basin and just below the project site by ODFW and CTUIR in 2010, found severe bank erosion, channel incision and head cutting in localized reaches, reduced stream length, high channel width:depth ratios, lack of floodplain connectivity, poor groundwater interaction, and lowered water table.
Recent site visits conducted by USWCD and ODFW found that similar limiting factors applied to this specific project site. A review of the historical aerial photography from 1947 show Dry Creek having a large meander bend as the creek enters the Aiwohi property. Photographs taken between 1947 and 1957 indicate the stream channel was straightened removing the oxbow and reducing the stream length by approximately 375 feet. The straightened reach of the project site has deeply incised causing excessive bank erosion. This channel incision has led to approximately 80% of the stream banks to erode over the entire project reach. Past efforts to maintain stream banks and protect infrastructure including rock barbs and the addition of cement rip-rap have had limited beneficial effects. The project site was heavily overgrazed by past landowners, resulting in a riparian zone dominated by grass and few residual alder and willows. Spawning gravels are present on the site but only in relation to the few pools that exist. The few existing pools are relatively deep (residual pool depth of 2-3 feet) but lack cover and complexity. The reach is riffle dominated, which is uncharacteristic for a natural stream with similar stream gradients.
Dry Creek has been characterized as a high priority stream for restoration, and as one of the highest steelhead producers in the Grande Ronde Basin. Upstream of the project site, flow is intermittent and subsurface during summer months. Water withdrawals occur above the project site, however information from the watermaster indicates that Dry Creek naturally flows sub-surface during the summer months above all points of diversion. Through the project area, surface flow occurs during the entire summer. The bottom mile of Dry Creek provides thermal refugia for steelhead during the summer months. Over a three year period of temperature data collection Dry Creek averaged a maximum high temperature of 18°C while down stream Willow and Fir Creeks reached 22°C on many occasions (CTUIR).
The Aiwohi project would increase additional habitat uplift to 4 miles of habitat restoration in the Willow Creek Drainage in a continuous reach. Previous restoration work on Dry Creek was conducted on 0.58 miles of the stream from the confluence at Willow Creekto the Aiwohi property downstream boundary. This project would add an additional 0.21 stream miles to previous restoration activities (see attached Conceptual Design).
The goal of this restoration project is to enhance and increase natural function and processes that improve habitat suitability for spawning and rearing steelhead, Chinook, other native fish, and wildlife resources.

Objectives

Increased quantity of large wood and juvenile rearing habitat
Increased quantity and quality of habitat diversity
Increased floodplain connectivity and riparian function
Improved sediment sorting and routing and adult spawning habitat
Increased channel complexity
Channel morphology closer to fully functional form
Increased quantity of pools, and stream velocity diversity

Major Risks

Water availability and surface flow is limited in Dry Creek, as is evident upstream of the project reach with much of the channel flowing intermittent and subsurface. The channel within the project reach has incised to a compacted caliche layer that may have a large role in supported a sustained baseflow. During the design phase, this condition will be further investigated, but there may be a risk that excavation through the caliche layer may result in a further loss of surface flow. The design approach will improve habitat conditions and pool features by creating conditions for aggradation and increasing channel bed elevations, rather than excavation. The risks associated with the successful implementation of the project at this time are securing available construction funding and obtaining environmental clearances and permit.

Permits and Consultation

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

Project Schedule

Year: 2018

Monitoring: Effectiveness monitoring will be conduct by the USWCD staff for a period of 5 years to determine if the project goals are accomplished. Monitoring will include annual visual observations, photo documentation and vegetation survival plots. The District is currently seeking more extensive habitat and channel plan form monitoring to extend the monitoring duration. Additionally, biological monitoring will be conducted in coordination with annual surveys being completed by the Confederated Tribes of the Umatilla Indian Reservation on the downstream project area.

Project Relations

Multi-phase Effort: No

Preliminary Cost Estimate

Total: $347,963
BPA Funding: $237,963
OWEB Funding: $110,000

Design Funding

Design Funds Requested: No