Prospectus of Proposed Project Opportunity

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Opportunity Title

Catherine Creek RM38.5 Stream Restoration

Opportunity Lead

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Landowners

Contacted: Yes
Supportive: The landowners are highly supportive of the project.
Contribution: The landowner is willing to reserve approximately 9 acres of historic floodplain along Catherine Creek for restoration implementation and conservation protection under a Conservation Reserve Enhancement Program (CREP) agreement. The water right that services this portion of the property with a priority date of 1864 will be transferred to be permanently instream. After the irrigation system on the remaining property is upgraded and efficiency is determined, the water savings will also be transferred to a permanent instream water right.

River

Name: Catherine Creek
Mile: 38.5

Tributary: Grande Ronde

Restoration Atlas

BSR: CC3A
Tier: Tier 1
Initial Score:
Proposed Score:

Restoration Activities

1. Protect Land and Water (Easement, Acquisition, Management)
30. Aquire Instream Flow (Lease- Purchase)
32. Irrigation System Upgrades -Water Management
34. Upland Vegetation Treatment - Management

Species Affected

Focal: Snake River spring Chinook salmon, Snake River steelhead, bull trout, and lamprey
Other:

Description

Catherine Creek is a high priority tributary within the Grande Ronde Subbasin as identified in the Federal Columbia River Power System Biological Opinion (FCRPS BO) referencing the Biologically Significant Reaches. The Catherine Creek ATLAS, a prioritization strategy prepared by the Interagency Science Technical Advisory Committee (ISTAC), lists Reach CC3A, near Union, Oregon, as a Tier 1 (highest priority) channel segment. The Project Reach is within Reach CC3A located between RM 40.7 and RM 37.1. Limiting factors for Reach CC3A are identified in the ATLAS and itemized in Table 1.
The Project Reach is within Oregon Department of Fish and Wildlife's (ODFW) Habitat Reach 12 along Catherine Creek between the town of Union and the confluence of Pyles Creek. Primary land uses along the reach are livestock grazing and agriculture, and the vegetation along the stream corridor is predominantly grasses, riparian shrubs and deciduous trees.

Table 1. Limiting factors identified for Reach CC3A by ISTAC.
1.1: Habitat Quantity: Anthropogenic Barriers
4.1: Riparian Condition: Riparian Condition
4.2: Riparian Condition: Large Wood Recruitment
5.1: Peripheral and Transitional Habitats: Side Channel and Wetland Conditions
5.2: Peripheral and Transitional Habitats: Floodplain Condition
6.1: Channel Structure and Form: Bed and Channel Form
6.2: Channel Structure and Form: Instream Structural Complexity
7.2: Sediment Conditions: Increased Sediment Quantity

8.1: Water Quality: Temperature
8.2: Water Quality: Oxygen
8.4: Water Quality: Turbidity
9.2: Water Quantity: Decreased Water Quantity

The project restoration plan for CC 38.5 is a three-phase approach to achieve goals and objectives for improving conditions for ESA-listed aquatic species. The first phase of this project will install a high efficiency sprinkle irrigation system that services 65.1 acres of the upland property. Currently the upland property is flood irrigated and has proven over the years to be both inefficient and resulted in water quality issues from flood water returns to the main channel. NRCS staff have indicated that the conversion from flood to sprinkle irrigation for this property will be more efficient at distributing water over the entire acreage, as well as reduce the use of water by 40-60%. Prior to the installation of the irrigation system the landowner has agreed to sign a Cooperative Conservation Agreement that will allow the District to complete the second two phases of the restoration effort.
Phase two will consist of physical restoration of the floodplain, main channel, and aquatic habitat that is coordinated across multiple ownerships within the project reach. The primary landowner has agreed to allow the District complete access to over 9 acres of the property along Catherine Creek. The District will work with the Bureau of Reclamation (Reclamation) and other project partners to design a new channel alignment that reconstructs meanders through a more natural alignment, restores floodplain connectivity, and improves geomorphic function and instream habitat. Construction is planned to start in 2019 following completion of a reviewed design.
Phase three of the project will consist of replanting native vegetation and protecting the project site from livestock and agricultural impacts. The landowner has agreed to defer the transfer of water rights for the 9 acres that will be modified through construction, and allow that irrigation water to be used to increase plant survival for the first three years after construction. Three years following construction this water will be transferred to a permanent instream water right. The restoration site will then be enrolled into a 15-year protection agreement through the Conservation Reserve Enhancement Program (CREP).

Objectives

1) Reduce water withdrawal and usage by 40-60% through the construction of a more efficient irrigation delivery system (measured at the site).
2) Gain landowner support and cooperation for restoration and conservation actions in Catherine Creek and the associated floodplain by 2021 through a Signed Cooperative Conservation Agreement between the landowner and the District.

Major Risks

The risks associated with the project at this time are securing funding and permitting.

Permits and Consultation

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

Project Schedule

Year: 2018

Monitoring: Water withdrawal and delivery volume will be measured with an inline flowmeter installed near the pump. The meter will collect instantaneous flow values along with a total water volume. Actual water use will be measured to determine the difference from the total water right, and the amount of savings that can be transferred to instream.
Monitoring will include photo points taken for (3 years) at monumented locations to document construction completion, system maintenance and effectiveness for water delivery.
Annual discussions with the landowner will also be completed to make sure that the system is functioning properly.

Project Relations

Multi-phase Effort: Yes
Phase Description: Phase one will consist of the design and installation of the upgraded irrigation system and the initial steps for transferring an 1864 water right to instream. During this phase the landowner will be required to enter into a Cooperative Conservation Agreement with the District that establishes a 15-year conservation easement on approximately 9 acres of historic floodplain, allows for restoration project design and construction, and identifies the water rights transfer.
Could Phase 1 be a Stand Alone Project: True
Would the project lose value if future phases don’t happen: This could be considered as a stand alone project. The conversion from flood irrigation to sprinkle irrigation will result in between 40-60% reduction in water use for this property from Catherine Creek that has been documented as flow limited during the summer months. Although there are positive gains of water quantity, future phases of the project are intended to improve aquatic habitat quality and floodplain function. In addition, the future phases of the project will be coordinated with restoration plans for both the upstream and downstream portions of the reach, resulting in a much longer reach of improved conditions for key fish species.

Preliminary Cost Estimate

Total:
BPA Funding:
OWEB Funding: 40,000

Design Funding

Design Funds Requested: No