

# clec@yakamafish-n...

## Fox Creek & Silver Falls P...

Submission Date  
March 1, 2021 01:03

*Project Title	Fox Creek & Silver Falls Project Areas Habitat Restoration Project
*Sponsor	Yakama Nation Fisheries
*Primary Contact	Christopher Clemons
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*Anticipated Request - SRFB	\$560,000.00
*Anticipated Request - Tributary Committee	\$250,000.00
*Anticipated Other Funding	\$450,000.00
*Anticipated TOTAL Budget	\$1,260,000.00
*Other Funding Source(s)	Bonneville Power Administration (BPA), (Yakama Nation Fish Accords Funding)
*Briefly describe the location of the project	This project will occur in the Upper-middle Entiat River in two separate reaches (Fox Creek, RM 27.8-28.2) & (Silver Falls, RM 30.3-31.5)
*Latitude (decimal degrees)	47.954531
*Longitude (decimal degrees)	120.534169
*Project subbasin	Entiat
*Entiat Assessment Unit(s)	Entiat River-Lake Creek
*Reach(es) Name	Upper Stillwaters
1. *In one or two sentences, what do you propose to do?	This project proposed creating perennial side channels and placing large wood structures throughout the Fox Creek and Silver Falls reaches.
2. *What species will the	Spring Chinook Steelhead Bull Trout

project benefit?

Summer Chinook

Lamprey

3. \*Select the project's objectives and the associated tracking metrics

Instream Habitat (Includes Floodplain & Off-Channel Reconnection)

Instream Habitat: Reporting Code

Acres of channel/off-channel connected or added

Miles of off-channel stream created

Miles of instream habitat treated

4. \*Does this project or any of its phases (e.g., design) already exist in Salmon Recovery Portal or PRISM?

No

5. \*Has this project been submitted previously for funding through the SRFB and/or Targeted process(es)?

No

6. \*What category is the project?

Restoration

7. \*What project phase(s) are proposed for completion?

Construction

8. Is your project within a completed (or soon-to-be completed) Reach Assessment or other type of assessment (e.g., Rapid Site Assessment, other)?

Upper Stillwaters Reach Stream Corridor Assessment & Habitat Restoration Strategy

9. \*Which limiting factors does the project propose to address?

Cover - Wood

Flow - Scour

Off-Channel - Floodplain

Off-Channel - Side-Channels

Pool Quantity & Quality

Pools - Deep Pools

Temperature - Adult Holding

Temperature - Rearing

10. \*Which life stages will the proposed project address?

Adult Migration

Adult Non-Spawning (Bull Trout)

Natal Rearing (Bull Trout)

Subadult Rearing (Bull Trout)

Fry

Holding and Maturation

Smolt Outmigration

Summer Rearing

Winter Rearing

11. \*Freshwater Benefits - To what extent will your project improve survival,

This project will enhance up to 1.6 miles of off-channel and mainstem habitat in two project areas. The project will increase the juvenile rearing and adult holding habitat through a multi-

capacity and/or distribution for target species at the project scale?

faceted restoration strategy. Currently, the two project areas have viable habitat with high intrinsic potential that is otherwise inaccessible at all flow conditions. This project aims to provide juvenile overwintering habitat and summer low flow rearing habitat as well as mainstem adult cover and holding habitat for targeted species. In many of the project areas the habitat is close to meeting targeted goals. With this restoration action those goals are more easily attained.

12. \*Temporal Effect - Briefly describe how and to what extent the project would promote natural stream/watershed process consistent with reach-scale geomorphology?

Fox Creek - Lack of large wood and the disconnection of floodplain and off-channel habitat are the primary deficiencies targeted for restoration in this reach. Infrastructure associated with the Fox Creek Campground impairs floodplain and side channel connectivity. Removal or alteration of bank armoring, culvert replacement and select grading could reconnect approximately 690 feet of side channel at low flow. Just downstream of the Fox Creek Campground, large wood enhancements could be used to enhance channel migration processes and channel complexity. These actions could help achieve off-channel habitat, large wood recruitment and log jam targets within this reach.

Silver Falls - The restoration strategy for this reach is focused on enhancing existing complex habitats through placement of large wood and side-channel enhancements. This reach is considered the most laterally active reach above Box Canyon which is situated between the two project areas. This lateral migration and the reach's depositional nature translate to geomorphic complexity in the form of bars (point and traverse), high and low flow side channels, islands and abandoned floodplain scars. These geomorphic features create complex habitat elements that could be easily enhanced to create abundant high-quality habitat within this reach. Historically, more abundant log jams would have existed and formed in such a depositional reach that would have contributed to multi-thread channel form, pool formation and more instream cover and complexity.

13. Temporal Effect - How long will it take for the benefits of the project to be realized?

1-10 years

14. Temporal Effect - How long will the restoration action and its benefits persist?

50+ years

15. Temporal Effect - What level and/or interval of maintenance is anticipated? What is the plan for any anticipated maintenance?

Yearly monitoring of the project's as-built survey will take place post implementation year. In addition, the project sites will be monitored during high-flow events of the Q5 or greater to assess project element changes. Yearly photo and visual inspection of the project elements will be completed and a report will accompany the annual assessments. Yearly maintenance is not anticipated any of the sites as they are meant to be self-sustaining.

16. Methods - Briefly describe the potential (for design) or proposed restoration methods and how they will achieve project objectives.

Fox Creek Application: Three perennial side channels (referred to as the lower, middle, and upper alignments) are proposed within the Fox Creek reach. Each selected side channel alignment follows an existing floodplain scar for a portion of its length to minimize excavation quantities and riparian impacts. Sediment plugs will be removed at the lower and middle side channels to increase the low flow inundation frequency. The

Upper side channel will require more extensive earthwork to lower the bed channel elevation depth at or near groundwater. This will ensure stranding does not become an issue. Two existing undersized culverts will be replaced with more fish friendly bridges. Apex jams will be constructed at the inlet to each channel to maintain inlet depth via scour and to constrict the mainstem to encourage flow into the channel. Wood will be strategically placed throughout the channels and associated scour pools will further add complexity. An inside out method will be utilized to further reduce riparian impact and where applicable existing campground access routes will be utilized for heavy equipment. River right large woody material placement will be a combination of helicopter and on-the-ground equipment.

Perennial side channels are included in the Silver Falls project area as well. Construction methodology will be similar for these locations as well. Several of the side channels in this location are frequently wetted in their current conditions. The project will enhance connectivity with limited excavation. Additionally, in areas where large woody material jams are naturally forming, these areas will be augmented with additional wood including pilings.

1. \*What is the landownership?

USDA Forest Service

2. \*Have you secured landowner participation in or acceptance for this project?

Yes

\*Please explain

The Yakama Nation Fisheries (YNF) has been working closely with the US Forest Service, Entiat District to implement projects in these two areas since 2013 after the projects and areas were identified in the 2013 Upper Stillwaters Stream Corridor Assessment and Habitat Restoration Strategy. In the project ranking prioritization process for this assessment both project areas were ranked in the top tier of projects/areas that had the highest intrinsic potential. At the time the FS asked the YNF to put this project area on hold while the current recreation plan was updated for the District. The YNF then completed work at other project areas within the Upper Stillwaters Reach in 2017 and again in 2020. The completed work coupled with this work will help to create a more seamless and contiguous habitat corridor totally nearly 5 miles. Currently this work is scheduled to be implemented in 2022 and can be found in the District's Unified Program of Work (UPOW) for 2022. The YNF has a firm commitment from the FS to allocate time and resources to implement this project.

3. Describe any land owner requirements (e.g., design elements, right-of-ways, access agreements, liability waivers, etc.) and if/how they could affect the project

There are several requirements specific to Forest Service lands that this project will need to adhere to. Since the Entiat River is listed as a candidate river for the "Wild & Scenic" designation there are specific height and visibility restrictions for structures and how they interact with existing road infrastructure. Additionally, since some of this work occurs in and around existing campgrounds and will remain as part of the campground landscape upon project completion there may be specific signage and/or exclusion fencing installed to deter damage of newly created habitat.

4. Will the project raise

Both the Fox Creek and Silver Falls Project Areas are far enough

potential concerns for interest groups (e.g., recreational users) or the community at large (including upstream/ downstream/ adjacent landowners)?

up in the watershed that there are no nearby private structures. All work will occur in and around two well established campground areas where recreation is limited to campground and upland trail use. River recreation within these two areas is almost non-existent since fishing is not allowed below Entiat River Falls.

5. Who will have the responsibility to manage and maintain the project? What is the responsibility of current or future landowners?

The FS will be granting permission and access to the YNF to conduct this restoration. The YNF will obtain all necessary permits it is responsible for and work with the FS to move through the NEPA process. Outreach will be conducted by the FS through the NEPA scoping process. Additional outreach will be conducted by the YNF to notify the downstream landowners of the restoration taking place with an emphasis on helicopter-log placement during construction activities. Upon project completion an as-built survey will be completed and this will serve as the template for future monitoring of all project elements by the YNF. The YNF will utilize and ID/IQ contract for any maintenance if needed and project elements will be monitored during significant flow events.

6. Please describe the risk of failure associated with this project.

The risk of failure associated with this project is "0" to none. The project has been designed to withstand a 100-year flood event. All project elements have been designed and stamped by a licensed engineer and input provided by a multi-disciplined team of restoration professionals. The structures are meant to immobile and remain at their installation locations. Additionally, the proposed side channels have been designed with enough excavation and grade to keep them flushed of sediment and debris.

7. Is there any public outreach planned during and/or after implementation? Does the project build community support for salmon recovery efforts?

Outreach will be conducted by the FS through their NEPA scoping process and additional outreach will be conducted by the YNF through watershed events prior to implementation. Specific outreach to support helicopter placement of large woody material will also be conducted by both parties. Notification will be given in advance to the public of any campground temporary closures. Support for this restoration as well as previous restoration efforts has been really positive throughout the watershed, especially the middle and lower watershed areas where restoration interacts directly with private infrastructure. Multiple outreach meetings over the course of the past ten years has built trust with the public, permitting agencies as well as local municipalities.

8. Does the project represent an opportunity for economic benefit? How much benefit does the project create for the dollars invested?

No, this is a restoration project located in on National Forest Lands. It may however have an indirect effect on the salmon fishery as a whole by increasing the number of salmon that are produced in this watershed which would have a direct effect on the harvestable amount of salmon for private and commercial fisheries.

9. Describe any partnerships, their experience, and types of contributions supporting the project.

The Cascadia Conservation District has partnered with the YNF to conduct outreach activities within this watershed and will likely assist the YNF during one or more of the seasonal outreach events.